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ABSTRACT

This report on the professoriate in American higher education explores how the use of faculty time is rewarded and, especially, what activities of the professoriate are most highly prized. Changes in the work of higher education institutions through the years--its movement from teaching to service and then research, are noted, as are conflicts resulting from institutions attempting to achieve competing goals. Concern is raised regarding the emphasis on research and publication for academic advancement. Four general views of scholarship are proposed: discovery, integration, application, and teaching. Institutions are encouraged to stress their unique qualities and strengths, and to reconsider the narrowness of the faculty reward system. The report's seven chapters have the following titles: "Scholarship over Time"; "Enlarging the Perspective"; "A Mosaic of Talent"; "The Creativity Contract"; "The Campuses: Diversity with Dignity"; "A New Generation of Scholars"; and "Scholarship and Community." An appendix provides results of a 1989 national survey of faculty which addressed attitudes toward factors facilitating promotion and tenure, personal job satisfaction, and other job characteristics. Also provided in appendixes are chapter by chapter technical notes and a key to the Carnegie Classifications. Approximately 100 references are included. (DB)

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A SPECIAL REPORT

SCHOLARSHIP RECONSIDERED

PRIORITIES OF THE PROFESSORIATE

ERNEST L. BOYER

THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

HE 024 051

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8 IVY LANE, PRINCETON, NEW JERSEY 08540

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Jersey, by the following distinguished scholars: Marianne H. Begemann, Charles Bray, Daniel Fallon, James O. Freedman, Richard Slotkin, Hugo Sonnenschein, Joan Hinde Stewart, Catharine R. Stimpson, John Strassburger, Uri Treisman, and Margaret Wilkerson. For two days these outstanding scholars reviewed the manuscript, and their insightful comments led to significant revision of the text.

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ERNEST L. BOYER

President
The Carnegie Foundation
for the Advancement of Teaching

PREFACE

DURING THE PAST SEVERAL YEARS, while visiting colleges and universities across the nation, I've been struck by the renewed attention being paid to undergraduate education. The debate has focused on the core curriculum and the quality of campus life. Especially significant is the fact that students themselves increasingly have raised concerns about the priority assigned to teaching on the campus. Given these lively discussions, I'm beginning to believe that the 1990s may well come to be remembered as the decade of the undergraduate in American higher education.

At the very heart of the current debate—the single concern around which all others pivot—is the issue of faculty time. What's really being called into question is the reward system and the key issue is this: what activities of the professoriate are most highly prized? After all, it's futile to talk about improving the quality of teaching if, in the end, faculty are not given recognition for the time they spend with students.

We begin this report on the professoriate by looking at the way the work of the academy has changed throughout the years—moving from teaching, to service, and then research, reflecting shifting priorities both within the academy and beyond. We then note how, following the Second World War, the faculty reward system narrowed at the very time the mission of American higher education was expanding, and we consider how many of the nation's colleges and universities are caught in the crossfire of these competing goals.

In the current climate, students all too often are the losers. Today, undergraduates are aggressively recruited. In glossy brochures, they're assured that teaching is important, that a spirit of community pervades the campus, and that general education is the core of the undergraduate experience. But the reality is that, on far too many cam-

puses, teaching is not well rewarded, and faculty who spend too much time counseling and advising students may diminish their prospects for tenure and promotion.

Faculty are losing out, too. Research and publication have become the primary means by which most professors achieve academic status, and yet many academics are, in fact, drawn to the profession precisely because of their love for teaching or for service—even for making the world a better place. Yet these professional obligations do not get the recognition they deserve, and what we have, on many campuses, is a climate that restricts creativity rather than sustains it.

Colleges and universities are also weakened by the current confusion over goals. The recent Carnegie Foundation study of student life revealed growing social separations and divisions on campus, increased acts of incivility, and a deepening concern that the spirit of community has diminished. In response, colleges and universities, from coast to coast, are searching for ways to affirm diversity while strengthening the loyalties on campuses. It is time to ask how the faculty reward system can enhance these efforts.

Ultimately, in the current scheme of things, the nation loses, too. At no time in our history has the need been greater for connecting the work of the academy to the social and environmental challenges beyond the campus. And yet, the rich diversity and potential of American higher education cannot be fully realized if campus missions are too narrowly defined or if the faculty reward system is inappropriately restricted. It seems clear that while research is crucial, we need a renewed commitment to service, too.

Thus, the most important obligation now confronting the nation's colleges and universities is to break out of the tired old teaching versus research debate and define, in more creative ways, what it means to be a scholar. It's time to recognize the full range of faculty talent and the great diversity of functions higher education must perform.

For American higher education to remain vital we urgently need a more creative view of the work of the professoriate. In response to this challenge, we propose in this report four general views of scholarship—discovery, integration, application, and teaching. In suggesting

these activities we underscore the point that our intention is to spark discussion, not restrict it.

Finally, we need a climate in which colleges and universities are less imitative, taking pride in their uniqueness. It's time to end the suffocating practice in which colleges and universities measure themselves far too frequently by external status rather than by values determined by their own distinctive mission. Let's agree that the 1990s will be the decade of undergraduate education. But let's also candidly acknowledge that the degree to which this push for better education is achieved will be determined, in large measure, by the way scholarship is defined and, ultimately, rewarded.

CHAPTER 1

Scholarship over Time

SEVERAL YEARS AGO, while completing our study of undergraduate education, it became increasingly clear that one of the most crucial issues—the one that goes to the core of academic life—relates to the meaning of scholarship itself. In *College: The Undergraduate Experience in America*, we said, "Scholarship is not an esoteric appendage; it is at the heart of what the profession is all about . . ." and "to weaken faculty commitment for scholarship . . . is to undermine the undergraduate experience, regardless of the academic setting."[1] The challenge, as we saw it, was to define the work of faculty in ways that enrich, rather than restrict, the quality of campus life.

Today, on campuses across the nation, there is a recognition that the faculty reward system does not match the full range of academic functions and that professors are often caught between competing obligations. In response, there is a lively and growing discussion about how faculty should, in fact, spend their time. Recently, Stanford University president Donald Kennedy called for more contact between faculty and students, especially in the junior and senior years, a time when career decisions are more likely to be made. "It is time," Kennedy said, "for us to reaffirm that education—that is, teaching in all its forms-is the primary task" of higher education.[2]

Several years ago, the University of California completed a study of undergraduate education, recommending that more weight be placed on teaching in faculty tenure decisions.[3] In the East, the University of Pennsylvania, in its faculty handbook, now states that "the teaching of students at all levels is to be distributed among faculty members without regard to rank or seniority as such."[4] In the Mid-

west, Robert Gavin, president of Macalester College, recently reaffirmed his institution's view of the liberal arts mission as including not only academic quality, but also internationalism, diversity, and service.[3]

It is *this* issue—what it means to be a scholar—that is the central theme of our report. The time has come, we believe, to step back and reflect on the variety of functions academics are expected to perform. It's time to ask how priorities of the professoriate relate to the faculty reward system, as well as to the missions of America's higher learning institutions. Such an inquiry into the work of faculty is essential if students are to be well served, if the creativity of all faculty is to be fully tapped, and if the goals of every college and university is to be appropriately defined.

While we speak with pride about the great diversity of American higher education, the reality is that on many campuses standards of scholarship have become increasingly restrictive, and campus priorities frequently are more imitative than distinctive. In this climate, it seems appropriate to ask: How can each of the nation's colleges and universities define, with clarity, its own special purposes? Should expectations regarding faculty performance vary from one type of institution to another? Can we, in fact, have a higher education system in this country that includes multiple models of success?

Other issues within the academy must be candidly confronted. For example, the administrative structure has grown more and more complex, the disciplines have become increasingly divided, and academic departments frequently are disconnected from one another. The curriculum is fragmented, and the educational experience of students frequently lacks coherence. Many are now asking: How can the work of the nation's colleges and universities become more intellectually coherent? Is it possible for scholarship to be defined in ways that give more recognition to interpretative and integrative work?

According to the dominant view, to be a scholar is to be a researcher—and publication is the primary yardstick by which scholarly productivity is measured. At the same time, evidence abounds that many professors feel ambivalent about their roles. This conflict of academic functions demoralizes the professoriate, erodes the vitality

of the institution, and cannot help but have a negative impact on students. Given these tensions, what is the balance to be struck between teaching and research? Should some members of the professoriate be thought of primarily as researchers, and others as teachers? And how can these various dimensions of faculty work be more appropriately evaluated and rewarded?

Beyond the campus, America's social and economic crises are growing—troubled schools, budget deficits, pollution, urban decay, and neglected children, to highlight problems that are most apparent. Other concerns such as acid rain, AIDS, dwindling energy supplies, and population shifts are truly global, transcending national boundaries. Given these realities, the conviction is growing that the vision of service that once so energized the nation's campuses must be given a new legitimacy. The challenge then is this: Can America's colleges and universities, with all the richness of their resources, be of greater service to the nation and the world? Can we define scholarship in ways that respond more adequately to the urgent new realities both within the academy and beyond?

Clearly, the educational and social issues now confronting the academy have changed profoundly since the first college was planted on this continent more than 350 years ago. Challenges on the campus and in society have grown, and there is a deepening conviction that the role of higher education, as well as the priorities of the professoriate, must be redefined to reflect new realities.

Looking back, one can see that scholarship in American higher education has moved through three distinct, yet overlapping phases. The colonial college, with its strong British roots, took a view of collegiate life that focused on the student—on building character and preparing new generations for civic and religious leadership. One of the first goals the English settlers of Massachusetts pursued, said the author of a description of the founding of Harvard College in 1636, was to "advance *Learning* and perpetuate it to Posterity."[4] Harvard College, patterned after Emmanuel College of Cambridge, England, was founded to provide a continuous supply of learned clergy for "the

city on the hill" that the Massachusetts Puritans hoped would bring redemptive light to all mankind.

The colonial college was expected to educate and morally uplift the coming generation. Teaching was viewed as a vocation—a sacred calling—an act of dedication honored as fully as the ministry. Indeed, what society expected of faculty was largely dictated by the religious purposes of the colleges that employed them. Students were entrusted to tutors responsible for their intellectual, moral, and spiritual development. According to historian Theodore Benditt, "professors were hired not for their scholarly ability or achievement but for their religious commitment. Scholarly achievement was not a high priority, either for professors or students."[7]

This tradition, one that affirmed the centrality of teaching, persisted well into the nineteenth century. Young scholars continued to be the central focus of collegiate life, and faculty were employed with the understanding that they would be educational mentors, both in the classroom and beyond. In 1869, the image of the scholar as *teacher* was evoked by Charles W. Eliot, who, upon assuming the presidency of Harvard College, declared that "the prime business of American professors . . . must be regular and assiduous class teaching."[8]

But change was in the wind. A new country was being formed and higher education's focus began to shift from the shaping of young lives to the building of a nation. As historian Frederick Rudolf says of the new generation of educators: "All were touched by the American faith in tomorrow, in the unquestionable capacity of Americans to achieve a better world."[9] It was in this climate that Rensselaer Polytechnic Institute in Troy, New York, one of the nation's first technical schools, was founded in 1824. RPI became, according to Rudolf, "a constant reminder that the United States needed railroad-builders, bridge-builders, builders of all kinds, and that the institute in Troy was prepared to create them even if the old institutions were not."[10]

In 1846, Yale University authorized the creation of a professorship of "agricultural chemistry and animal and vegetable physiology."[11] In the same decade, Harvard president Edward Everett stressed his institution's role in the service of business and economic

prosperity. The college took Everett's message to heart. When historian Henry Adams asked his students why they had come to study at Cambridge, the answer he got was unambiguous: "The degree of Harvard College is worth money to me in Chicago."[13]

The practical side of higher learning was remarkably enhanced by the Morrill Act of 1862, later called the Land Grant College Act. This historic piece of legislation gave federal land to each state, with proceeds from sale of the land to support both education in the liberal arts and training in the skills that ultimately would undergird the emerging agricultural and mechanical revolutions. The Hatch Act of 1887 added energy to the effort by providing federal funds to create university-sponsored agricultural experiment stations that brought learning to the farmer, and the idea of education as a democratic function to serve the common good was planted on the prairies.

Something of the excitement of this era was captured in Willa Cather's description of her fellow students and her teachers at the University of Nebraska in the 1890s: "[They] came straight from the cornfields with only summer's wages in their pockets, hung on through four years, shabby and underfed, and completed the course by really heroic self-sacrifice. Our instructors were oddly assorted: wandering pioneer school teachers, stranded ministers of the Gospel, a few enthusiastic young men just out of graduate school. There was an atmosphere of endeavor, of expectancy and bright hopefulness about the young college that had lifted its head from the prairie only a few years ago."[14]

Thus, American higher education, once devoted primarily to the intellectual and moral development of students, added *service* as a mission, and both private and public universities took up the challenge. In 1903, David Starr Jordan, president of Stanford University, declared that the entire university movement in the twentieth century "is toward reality and practicality."[15] By 1908, Harvard president Charles Eliot could claim: "At bottom most of the American institutions of higher education are filled with the modern democratic spirit of serviceableness. Teachers and students alike are profoundly moved by the desire to serve the democratic community.... All the colleges boast of the serviceable men they have trained, and regard the service-

able patriot as their ideal product. This is a thoroughly democratic conception of their function."[15]

Skeptics looked with amusement, even contempt, at what they considered the excesses of utility and accommodation. They long resisted the idea of making the university itself a more democratic institution and viewed with disdain Ezra Cornell's soaring pledge in the 1860s to "... found an institution 'where any person can find instruction in any study.' "[16] Some critics even viewed the agricultural experiment stations as a betrayal of higher education's mission. They ridiculed the "cow colleges," seeing in them a dilution of academic standards. Others recoiled from the idea that non-elite young people were going on to college.[17]

Still, a host of academics flocked to land-grant colleges, confident they had both the expertise and the obligation to contribute to building a nation. They embodied the spirit of Emerson, who years before had spoken of the scholarship of "action" as "the raw material out of which the intellect moulds her splendid products."[18] In this tradition, Governor Robert LaFollette forged, in Wisconsin, a powerful link between the campus and the state, one that became known nationally as the "Wisconsin Idea."[19] After visiting Madison in 1909, social critic Lincoln Steffens observed: "In Wisconsin the university is as close to the intelligent farmer as his pig-pen or his tool-house; the university laboratories are part of the alert manufacturer's plant. . . ."[20]

The idea that professors could spread knowledge that would improve agriculture and manufacturing gave momentum to what later became known as *applied* research. In the 1870s and 1880s, many agreed that education was, above all, to be considered useful. In commenting on the link between the campus and applied agricultural research, historian Margaret Rossiter presented this vivid illustration: "The chief activities of a professor of agriculture . . . were to run field tests with various fertilizers and to maintain a model farm, preferably, but rarely, without financial loss."[21] Over the next thirty years, these agricultural sciences developed at a rapid pace, vastly increasing the knowledge that scholars could apply.

Service during this expansive period had a moral meaning, too. The goal was not only to *serve* society, but *reshape* it. Andrew White,

the first president of Cornell University, saw graduates "pouring into the legislatures, staffing the newspapers, and penetrating the municipal and county boards of America. Corruption would come to an end; pure American ideals would prosper until one day they governed the entire world."[2] Sociologist Edward Shils, in describing the spirit of the times, observed that "the concept of improvement was vague and comprehensive, signifying not only improvement of a practical sort but spiritual improvement as well."[3]

This ideal—the conviction that higher education had a moral mission to fulfill—was especially important to those who organized the American Economic Association in 1885, under the leadership of Richard Ely. Soon after joining the newly formed faculty at Johns Hopkins University, Ely wrote to the president, Daniel Coit Gilman, that the fledgling association would help in the diffusion of "a sound Christian political economy."[4] Most faculty were less zealous. Still, in this remarkable era marked by continued emphasis on liberal education and values, the faculty's role was energized by determined efforts to apply knowledge to practical problems.

Basic research, a third dimension of scholarly activity which can be traced to the first years of the Republic, also began to take hold. The earliest research effort was largely led by investigators *outside* the academy—people such as Thomas Jefferson; the mathematician Nathaniel Bowditch; the pioneer botanists John and William Bartram; and the intrepid astronomer Maria Mitchell, who set up an observatory on lonely Nantucket Island and, on one October night in 1847, discovered a new comet. When President Jefferson sought a scientific leader for the first of the great western explorations, he did not go to the colleges, where science was not yet well developed. Instead, he looked within government and selected his personal secretary, Meriwether Lewis, who was known to have a keen eye for the natural world. Before the expedition, Lewis was sent to Philadelphia, where he received careful training in astronomy, botany, and mineralogy from members of the American Philosophical Society.[5]

Still, colleges themselves were not wholly devoid of scientific effort. As early as 1738, John Winthrop of Harvard, the first academic

scientist, had a laboratory in which to conduct experiments. He later persuaded the lawmakers in Massachusetts to sponsor America's first astronomical expedition. These early scientists traveled to Newfoundland in 1761 to observe the transit of Venus.[5] Moreover, George Ticknor and Edward Everett, who attended a German university in 1815, are believed to have been the first Americans to go abroad to pursue advanced scholarly studies. Upon their return, they called, even then, for the introduction at Harvard of the German approach to scholarship.[6]

Yet, change came slowly. The new sciences were very much on the edges of academic life and expectations were modest. As Dael Wolfle wrote: "Professors were hired to teach the science that was already known-to add to that knowledge was not expected. . . ." [7] Consider also that when Benjamin Silliman became the first chemistry professor at Yale in 1802, there were only twenty-one other full-time scientific faculty positions in the United States.[8]

By the mid-nineteenth century, however, leading Atlantic seaboard colleges were giving more legitimacy to the authority of scientific effort and a few were beginning to transform themselves into research and graduate institutions. For example, Harvard's Lawrence Scientific School and Yale's Sheffield Scientific School were forerunners of the academy's deep commitment to the scholarship of science. Graduate courses in philosophy and the arts were established, and America's first Doctor of Philosophy was conferred at Yale in 1861.[9] And the Massachusetts Institute of Technology, which opened its doors at the end of the Civil War, soon was recognized as a center of scientific investigation.

In the late nineteenth century, more Americans who, like Ticknor and Everett, had studied in Europe were profoundly influenced by the research orientation of the German university and wanted to develop a similar model here.[10] G. Stanley Hall, first president of Clark University, wrote in 1891, "The German University is today the freest spot on earth. . . . Nowhere has the passion to push on to the frontier of human knowledge been so general."[11] Some, it is true, resisted the German influences. The prominent American humanist Irving Babbitt argued that the Ph.D. degree led to a loss of balance. He complained

about the "maiming and mutilation of the mind that comes from over-absorption in one subject," declaring that German doctoral dissertations gave him "a sort of intellectual nausea."[8]

Still, research and graduate education increasingly formed the model for the modern university. Academics on both continents were moving inevitably from faith in authority to reliance on scientific rationality. And to men like Daniel Coit Gilman, this view of scholarship called for a new kind of university, one based on the conviction that knowledge was most attainable through research and experimentation. Acting on this conviction, Gilman founded Johns Hopkins University in 1876, a step described by Shils as "perhaps the single, most decisive event in the history of learning in the Western hemisphere."[9]

In the 1870s, the universities of Pennsylvania, Harvard, Columbia, and Princeton, in that order, also began to offer programs leading to the Ph.D. degree, and the University of Chicago, founded in 1891, made the degree "the pinnacle of the academic program."[10] By 1895 William Rainey Harper, president of this newly formed university, could require "each appointee to sign an agreement that his promotions in rank and salary would depend chiefly upon his research productivity."[11]

By the late nineteenth century, the advancement of knowledge through *research* had taken firm root in American higher education, and colonial college values, which emphasized teaching undergraduates, began to lose ground to the new university that was emerging. Indeed, the founders of Johns Hopkins University considered restricting study on that campus to the graduate level only. In the end, some undergraduate education proved necessary, but the compromise was reluctantly made, and for many professors, class and lecture work became almost incidental. Service, too, was viewed as unimportant. Some even considered it a violation of the integrity of the university, since the prevailing Germanic model demanded that the professor view the everyday world from a distance.

It should be stressed, however, that throughout most of American higher education the emphasis on research and graduate education remained the exception rather than the rule. The principal mission at

most of the nation's colleges and universities continued to be the education of undergraduates. And the land-grant colleges, especially, took pride in service.

But in the 1940s, as the Great Depression gave way to a devastating war, the stage was set for a dramatic transformation of academic life. At that historic moment, Vannevar Bush of M.I.T. and James Bryant Conant of Harvard volunteered the help of the universities in bringing victory to the nation. In 1940, Bush took the lead in establishing the National Defense Research Committee which, a year later, became the Office of Scientific Research and Development. Academics flocked to Washington to staff the new agencies and federal research grants began to flow." Universities and the nation had joined in common cause.

After the war, Vannevar Bush urged continuing federal support for research. In a 1945 report to the President entitled *Science: The Endless Frontier,* he declared: "Science, by itself, provides no panacea for individual, social, and economic ills. It can be effective in the national welfare only as a member of a team, whether the conditions be peace or war. But without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world."» The case could not have been more clearly stated. Higher learning and government had, through scientific collaboration, changed the course of history—and the impact on the academy would be both consequential and enduring.

Soon, a veritable army of freshly minted Ph.D.s fanned out to campuses across the country. Inspired by their mentors, this new generation of faculty found themselves committed not only to their institutions, but also to their professions. Young scholars sought to replicate the research climate they themselves had recently experienced. Academic priorities that had for years been the inspiration of the few now became the imperative of the many. In the new climate, discipline-based departments became the foundation of faculty allegiance, and being a "scholar" was now virtually synonymous with being an academic professional. Christopher Jencks and David Riesman, cap-

turing the spirit of that period, declared that an *academic revolution* had taken place.[9]

In 1958, Theodore Caplow and Reece McGee defined this new reality when they observed that while young faculty were hired as *teachers*, they were evaluated primarily as *researchers*.[10] This shift in expectations is vividly revealed in two national surveys conducted by The Carnegie Foundation for the Advancement of Teaching. Twenty-one percent of the faculty surveyed in 1969 strongly agreed that it is difficult to achieve tenure without publishing. By 1989, the number had doubled, to 42 percent (table 1). The change at comprehensive colleges—from 6 percent to 43 percent—is especially noteworthy since these institutions have virtually no doctoral programs and only limited resources for research. Even at liberal arts colleges, where teaching has always been highly prized, nearly one in four faculty strongly agreed in 1989 that it is difficult to get tenure without publishing.[11]

Meanwhile, the nation's colleges and universities were experiencing another remarkable social transformation—the revolution of rising expectations. In 1947, Harry S Truman appointed a President's Commission on Higher Education and almost overnight the mission of higher education in the nation was dramatically redefined. In its landmark report, this panel of prominent citizens concluded that America's colleges and universities should no longer be "merely the instrument for producing an intellectual elite." Rather, the report stated, higher education must become "the means by which every citizen, youth, and adult, is enabled and encouraged to carry his education, formal and informal, as far as his native capacities permit."[12]

In response to this expansive vision, the nation moved from an *elite* to a *mass* system of higher education, to use sociologist Martin Trow's helpful formulation. New colleges were built, new faculty hired, and the G.I. Bill of Rights, first authorized in 1944, changed the entire tradition of who should go to college. Almost eight million former servicemen and women benefited from the legislation. In the years to come, younger brothers and sisters, and eventually sons and daughters, followed in the footsteps of the veterans. Higher education, once viewed as a privilege, was now accepted as a right.

Table 1

In My Department It Is Difficult for a Person to Achieve Tenure If He or She Does Not Publish

(Percentage Saying "Strongly Agree")

	1969	1989
All Respondents	21%	42%
Research	44	83
Doctorate-Granting	27	71
Comprehensive	6	43
Liberal Arts	6	24
Two-Year	3	4

Please see Appendix C for a definition of institution classifications.

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1969 and 1989 National Surveys of Faculty.

But even as the mission of American higher education was expanding, the standards used to measure academic prestige continued to be narrowed. Increasingly, professors were expected to conduct research and publish results. Promotion and tenure depended on such activity, and young professors seeking security and status found it more rewarding—in a quite literal sense—to deliver a paper at a national convention in New York or Chicago than teach undergraduates back home. Lip service still was being paid to maintaining a balance between *collegiate* responsibilities and *university* work, but on most campuses the latter had clearly won the day.

Research *per se* was not the problem. The problem was that the research mission, which was appropriate for *some* institutions, created a shadow over the entire higher learning enterprise—and the model of a "Berkeley" or an "Amherst" became the yardstick by which all institutions would be measured. Ernest Lynton, Commonwealth Professor at the University of Massachusetts, in commenting on the new priorities, concluded that developments after the Second World War "established too narrow a definition of scholarship and too limited a range of instruction."[6] Ironically, at the very time America's higher education institutions were becoming more open and inclusive, the

culture of the professoriate was becoming more hierarchical and restrictive.

Thus, in just a few decades, priorities in American higher education were significantly realigned. The emphasis on undergraduate education, which throughout the years had drawn its inspiration from the colonial college tradition, was being overshadowed by the European university tradition, with its emphasis on graduate education and research. Specifically, at many of the nation's four-year institutions, the focus had moved from the student to the professoriate, from general to specialized education, and from loyalty to the campus to loyalty to the profession.

We conclude that for America's colleges and universities to remain vital a new vision of scholarship is required. What we are faced with, today, is the need to clarify campus missions and relate the work of the academy more directly to the realities of contemporary life. We need especially to ask how institutional diversity can be strengthened and how the rich array of faculty talent in our colleges and universities might be more effectively used and continuously renewed. We proceed with the conviction that if the nation's higher learning institutions are to meet today's urgent academic and social mandates, their missions must be carefully redefined and the meaning of scholarship creatively reconsidered.

CHAPTER 2

Enlarging the Perspective

SINCE COLONIAL TIMES, the American professoriate has responded to mandates both from within the academy and beyond. First came teaching, then service, and finally, the challenge of research. In more recent years, faculty have been asked to blend these three traditions, but despite this idealized expectation, a wide gap now exists between the myth and the reality of academic life. Almost all colleges pay lip service to the trilogy of teaching, research, and service, but when it comes to making judgments about professional performance, the three rarely are assigned equal merit.

Today, when we speak of being "scholarly," it usually means having academic rank in a college or university and being engaged in research and publication. But we should remind ourselves just how recently the word "research" actually entered the vocabulary of higher education. The term was first used in England in the 1870s by reformers who wished to make Cambridge and Oxford "not only a place of teaching, but a place of learning," and it was later introduced to American higher education in 1906 by Daniel Coit Gilman.[1] But scholarship in earlier times referred to a variety of creative work carried on in a variety of places, and its integrity was measured by the ability to think, communicate, and learn.

What we now have is a more restricted view of scholarship, one that limits it to a hierarchy of functions. Basic research has come to be viewed as the first and most essential form of scholarly activity, with other functions flowing from it. Scholars are academics who conduct research, publish, and then perhaps convey their knowledge to students or apply what they have learned. The latter functions grow *out of* scholarship, they are not to be considered a part of it. But knowledge is not necessarily developed in such a linear manner. The arrow of

causality can, and frequently does, point in *both* directions. Theory surely leads to practice. But practice also leads to theory. And teaching, at its best, shapes both research and practice. Viewed from this perspective, a more comprehensive, more dynamic understanding of scholarship can be considered, one in which the rigid categories of teaching, research, and service are broadened and more flexibly defined.

There is a readiness, we believe, to rethink what it means to be a scholar. Richard I. Miller, professor of higher education at Ohio University, recently surveyed academic vice presidents and deans at more than eight hundred colleges and universities to get their opinion about faculty functions. These administrators were asked if they thought it would be a good idea to view scholarship as more than research. The responses were overwhelmingly supportive of this proposition.[3] The need to reconsider scholarship surely goes beyond opinion polls, but campus debates, news stories, and the themes of national conventions suggest that administrative leaders are rethinking the definitions of academic life. Moreover, faculty, themselves, appear to be increasingly dissatisfied with conflicting priorities on the campus.

> How then should we proceed? Is it possible to define the work of faculty in ways that reflect more realistically the full range of academic and civic mandates?

We believe the time has come to move beyond the tired old "teaching versus research" debate and give the familiar and honorable term "scholarship" a broader, more capacious meaning, one that brings legitimacy to the full scope of academic work. Surely, scholarship means engaging in original research. But the work of the scholar also means stepping back from one's investigation, looking for connections, building bridges between theory and practice, and communicating one's knowledge effectively to students. Specifically, we conclude that the work of the professoriate might be thought of as having four separate, yet overlapping, functions. These are: the scholarship of *discovery;* the scholarship of *integration;* the scholarship of *application;* and the scholarship of *teaching*.

THE SCHOLARSHIP OF DISCOVERY

The first and most familiar element in our model, the *scholarship of discovery,* comes closest to what is meant when academics speak of "research." No tenets in the academy are held in higher regard than the commitment to knowledge for its own sake, to freedom of inquiry and to following, in a disciplined fashion, an investigation wherever it may lead. Research is central to the work of higher learning, but our study here, which inquires into the meaning of scholarship, is rooted in the conviction that disciplined, investigative efforts within the academy should be strengthened, not diminished.

The *scholarship of discovery,* at its best, contributes not only to the stock of human knowledge but also to the intellectual climate of a college or university. Not just the outcomes, but the process, and especially the passion, give meaning to the effort. The advancement of knowledge can generate an almost palpable excitement in the life of an educational institution. As William Bowen, former president of Princeton University, said, scholarly research "reflects our pressing, irrepressible need as human beings to confront the unknown and to seek understanding for its own sake. It is tied inextricably to the freedom to think freshly, to see propositions of every kind in ever-changing light. And it celebrates the special exhilaration that comes from a new idea."[3]

The list of distinguished researchers who have added luster to the nation's intellectual life would surely include heroic figures of earlier days—Yale chemist Benjamin Silliman; Harvard naturalist Louis Agassiz; astronomer William Cranch Bond; and Columbia anthropologist Franz Boas. It would also include giants of our time—James Watson, who helped unlock the genetic code; political philosopher Hannah Arendt; anthropologist Ruth Benedict; historian John Hope Franklin; geneticist Barbara McClintock; and Noam Chomsky, who transformed the field of linguistics; among others.

When the research records of higher learning are compared, the United States is the pacesetter. If we take as our measure of accomplishment the number of Nobel Prizes awarded since 1945, United States scientists received 56 percent of the awards in physics, 42 per-

cent in chemistry, and 60 percent in medicine. Prior to the outbreak of the Second World War, American scientists, including those who fled Hitler's Europe, had received only 18 of the 129 prizes in these three areas.[4] With regard to physics, for example, a recent report by the National Research Council states: "Before World War II, physics was essentially a European activity, but by the war's end, the center of physics had moved to the United States."[5] The Council goes on to review the advances in fields ranging from elementary particle physics to cosmology.

The research contribution of universities is particularly evident in medicine. Investigations in the late nineteenth century on bacteria and viruses paid off in the 1930s with the development of immunizations for diphtheria, tetanus, lobar pneumonia, and other bacterial infections. On the basis of painstaking research, a taxonomy of infectious diseases has emerged, making possible streptomycin and other antibiotics. In commenting on these breakthroughs, physician and medical writer Lewis Thomas observes: "It was basic science of a very high order, storing up a great mass of interesting knowledge for its own sake, creating, so to speak, a bank of information, ready for drawing on when the time for intelligent use arrived."[6]

Thus, the probing mind of the researcher is an incalculably vital asset to the academy and the world. Scholarly investigation, in all the disciplines, is at the very heart of academic life, and the pursuit of knowledge must be assiduously cultivated and defended. The intellectual excitement fueled by this quest enlivens faculty and invigorates higher learning institutions, and in our complicated, vulnerable world, the discovery of new knowledge is absolutely crucial.

THE SCHOLARSHIP OF INTEGRATION

In proposing the *scholarship of integration,* we underscore the need for scholars who give meaning to isolated facts, putting them in perspective. By integration, we mean making connections across the disciplines, placing the specialties in larger context, illuminating data in a revealing way, often educating nonspecialists, too. In calling for a scholarship of integration, we do not suggest returning to the

"gentleman scholar" of an earlier time, nor do we have in mind the dilettante. Rather, what we mean is serious, disciplined work that seeks to interpret, draw together, and bring new insight to bear on original research.

This more integrated view of knowledge was expressed eloquently by Mark Van Doren nearly thirty years ago when he wrote: "The connectedness of things is what the educator contemplates to the limit of his capacity. No human capacity is great enough to permit a vision of the world as simple, but if the educator does not aim at the vision no one else will, and the consequences are dire when no one does."[5] It is through "connectedness" that research ultimately is made authentic.

The scholarship of integration is, of course, closely related to discovery. It involves, first, doing research at the boundaries where fields converge, and it reveals itself in what philosopher-physicist Michael Polanyi calls "overlapping [academic] neighborhoods."[6] Such work is, in fact, increasingly important as traditional disciplinary categories prove confining, forcing new topologies of knowledge. Many of today's professors understand this. When we asked faculty to respond to the statement, "Multidisciplinary work is soft and should not be considered scholarship," only 8 percent agreed, 17 percent were neutral, while a striking 75 percent disagreed (table 2). This pattern of opinion, with only slight variation, was true for professors in all disciplines and across all types of institutions.

The scholarship of integration also means interpretation, fitting one's own research—or the research of others—into larger intellectual patterns. Such efforts are increasingly essential since specialization, without broader perspective, risks pedantry. The distinction we are drawing here between "discovery" and "integration" can be best understood, perhaps, by the questions posed. Those engaged in discovery ask, "What is to be known, what is yet to be found?" Those engaged in integration ask, "What do the findings *mean?* Is it possible to interpret what's been discovered in ways that provide a larger, more comprehensive understanding?" Questions such as these call for the power of critical analysis and interpretation. They have a legitimacy

of their own and if carefully pursued can lead the scholar from information to knowledge and even, perhaps, to wisdom.

Table 2

Multidisciplinary Work Is Soft and Should Not Be Considered Scholarship

	AGREE	NEUTRAL	DISAGREE
All Respondents	8%	17%	75%
Research	7	9	84
Doctorate-Granting	6	13	80
Comprehensive	8	14	78
Liberal Arts	8	16	77
Two-Year	9	27	63

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1989 National Survey of Faculty.

Today, more than at any time in recent memory, researchers feel the need to move beyond traditional disciplinary boundaries, communicate with colleagues in other fields, and discover patterns that connect. Anthropologist Clifford Geertz, of the Institute for Advanced Study in Princeton, has gone so far as to describe these shifts as a fundamental "refiguration, . . . a phenomenon general enough and distinctive enough to suggest that what we are seeing is not just another redrawing of the cultural map—the moving of a few disputed borders, the marking of some more picturesque mountain lakes—but an alteration of the principles of mapping. Something is happening," Geertz says, "to the way we think about the way we think."

This is reflected, he observes, in:

> . . . philosophical inquiries looking like literary criticism (think of Stanley Cavell on Beckett or Thoreau, Sartre on Flaubert), scientific discussions looking like belles lettres *morceaux* (Lewis Thomas, Loren Eisley), baroque fantasies presented as deadpan empirical observations (Borges, Barthelme), histories that consist of equations and tables or law court testimony (Fogel and

> Engerman, Le Roi Ladurie), documentaries that read like true confessions (Mailer), parables posing as ethnographies (Castenada), theoretical treatises set out as travelogues (Lévi-Strauss), ideological arguments cast as historiographical inquiries (Edward Said), epistemological studies constructed like political tracts (Paul Feyerabend), methodological polemics got up as personal memoirs (James Watson).»

These examples illustrate a variety of scholarly trends—*interdisciplinary, interpretive, integrative.* But we present them here as evidence that an intellectual sea change may be occurring, one that is perhaps as momentous as the nineteenth-century shift in the hierarchy of knowledge, when philosophy gave way more firmly to science. Today, interdisciplinary *and* integrative studies, long on the edges of academic life, are moving toward the center, responding both to new intellectual questions and to pressing human problems. As the boundaries of human knowledge are being dramatically reshaped, the academy surely must give increased attention to the *scholarship of integration.*

THE SCHOLARSHIP OF APPLICATION

The first two kinds of scholarship—discovery and integration of knowledge—reflect the investigative and synthesizing traditions of academic life. The third element, the *application* of knowledge, moves toward engagement as the scholar asks, "How can knowledge be responsibly applied to consequential problems? How can it be helpful to individuals as well as institutions?" And further, "Can social problems *themselves* define an agenda for scholarly investigation?"

Reflecting the *Zeitgeist* of the nineteenth and early twentieth centuries, not only the land-grant colleges, but also institutions such as Rensselaer Polytechnic Institute and the University of Chicago were founded on the principle that higher education must serve the interests of the larger community. In 1906, an editor celebrating the leadership

of William Rainey Harper at the new University of Chicago defined what he believed to be the essential character of the American scholar. Scholarship, he observed, was regarded by the British as "a means and measure of self-development," by the Germans as "an end in itself," but by Americans as "equipment for service."[11] Self-serving though it may have been, this analysis had more than a grain of truth.

Given this tradition, one is struck by the gap between values in the academy and the needs of the larger world. Service is routinely praised, but accorded little attention—even in programs where it is most appropriate. Christopher Jencks and David Riesman, for example, have pointed out that when free-standing professional schools affiliated with universities, they lessened their commitment to applied work even though the original purpose of such schools was to connect theory and practice. Professional schools, they concluded, have oddly enough fostered "a more academic and less practical view of what their students need to know."[12]

Colleges and universities have recently rejected service as serious scholarship, partly because its meaning is so vague and often disconnected from serious intellectual work. As used today, service in the academy covers an almost endless number of campus activities—sitting on committees, advising student clubs, or performing departmental chores. The definition blurs still more as activities beyond the campus are included—participation in town councils, youth clubs, and the like. It is not unusual for almost any worthy project to be dumped into the amorphous category called "service."

Clearly, a sharp distinction must be drawn between *citizenship* activities and projects that relate to scholarship itself. To be sure, there are meritorious social and civic functions to be performed, and faculty should be appropriately recognized for such work. But all too frequently, service means not doing scholarship but doing good. To be considered *scholarship*, service activities must be tied directly to one's special field of knowledge and relate to, and flow directly out of, this professional activity. Such service is serious, demanding work, requiring the rigor—and the accountability—traditionally associated with research activities.

The *scholarship of application*, as we define it here, is not a one-way street. Indeed, the term itself may be misleading if it suggests that knowledge is first "discovered" and then "applied." The process we have in mind is far more dynamic. New intellectual understandings can arise out of the very act of application—whether in medical diagnosis, serving clients in psychotherapy, shaping public policy, creating an architectural design, or working with the public schools. In activities such as these, theory and practice vitally interact, and one renews the other.

Such a view of scholarly service—one that both applies and contributes to human knowledge—is particularly needed in a world in which huge, almost intractable problems call for the skills and insights only the academy can provide. As Oscar Handlin observed, our troubled planet "can no longer afford the luxury of pursuits confined to an ivory tower. . . . [S]cholarship has to prove its worth not on its own terms but by service to the nation and the world."[11]

THE SCHOLARSHIP OF TEACHING

Finally, we come to the *scholarship of teaching*. The work of the professor becomes consequential only as it is understood by others. Yet, today, teaching is often viewed as a routine function, tacked on, something almost anyone can do. When defined as *scholarship*, however, teaching both educates and entices future scholars. Indeed, as Aristotle said, "Teaching is the highest form of understanding."

As a *scholarly* enterprise, teaching begins with what the teacher knows. Those who teach must, above all, be well informed, and steeped in the knowledge of their fields. Teaching can be well regarded only as professors are widely read and intellectually engaged. One reason legislators, trustees, and the general public often fail to understand why ten or twelve hours in the classroom each week can be a heavy load is their lack of awareness of the hard work and the serious study that undergirds good teaching.

Teaching is also a dynamic endeavor involving all the analogies, metaphors, and images that build bridges between the teacher's understanding and the student's learning. Pedagogical procedures must be

carefully planned, continuously examined, and relate directly to the subject taught. Educator Parker Palmer strikes precisely the right note when he says knowing and learning are communal acts.[14] With this vision, great teachers create a common ground of intellectual commitment. They stimulate active, not passive, learning and encourage students to be critical, creative thinkers, with the capacity to go on learning after their college days are over.

Further, good teaching means that faculty, as scholars, are also learners. All too often, teachers transmit information that students are expected to memorize and then, perhaps, recall. While well-prepared lectures surely have a place, teaching, at its best, means not only transmitting knowledge, but *transforming* and *extending* it as well. Through reading, through classroom discussion, and surely through comments and questions posed by students, professors themselves will be pushed in creative new directions.

In the end, inspired teaching keeps the flame of scholarship alive. Almost all successful academics give credit to creative teachers—those mentors who defined their work so compellingly that it became, for them, a lifetime challenge. Without the teaching function, the continuity of knowledge will be broken and the store of human knowledge dangerously diminished.

Physicist Robert Oppenheimer, in a lecture at the 200th anniversary of Columbia University in 1954, spoke elegantly of the teacher as mentor and placed teaching at the very heart of the scholarly endeavor: "The specialization of science is an inevitable accompaniment of progress; yet it is full of dangers, and it is cruelly wasteful, since so much that is beautiful and enlightening is cut off from most of the world. Thus it is proper to the role of the scientist that he not merely find the truth and communicate it to his fellows, but that he teach, that he try to bring the most honest and most intelligible account of new knowledge to all who will try to learn."[15]

Here, then, is our conclusion. What we urgently need today is a more inclusive view of what it means to be a scholar—a recognition that knowledge is acquired through research, through synthesis, through practice, and through teaching.[16] We acknowledge that these

four categories—the scholarship of discovery, of integration, of application, and of teaching—divide intellectual functions that are tied inseparably to each other. Still, there is value, we believe, in analyzing the various kinds of academic work, while also acknowledging that they dynamically interact, forming an interdependent whole. Such a vision of scholarship, one that recognizes the great diversity of talent within the professoriate, also may prove especially useful to faculty as they reflect on the meaning and direction of their professional lives.

CHAPTER 3

A Mosaic of Talent

THE RICHNESS OF FACULTY TALENT should be celebrated, not restricted. Only as the distinctiveness of each professor is affirmed will the potential of scholarship be fully realized. Surely, American higher education is imaginative and creative enough to support and reward not only those scholars uniquely gifted in research but also those who excel in the integration and application of knowledge, as well as those especially adept in the scholarship of teaching. Such a mosaic of talent, if acknowledged, would bring renewed vitality to higher learning and the nation.

While affirming the diversity of faculty functions, we wish also to underscore the point that some dimensions of scholarship are universal—mandates that apply to all.

First, all faculty should establish their credentials as *researchers*. Whether or not they choose specialized, investigative work on an ongoing basis, every scholar must, we believe, demonstrate the capacity to do original research, study a serious intellectual problem, and present to colleagues the results. Indeed, this is what the dissertation, or a comparable piece of creative work, is all about.

Second, all members of the faculty should, throughout their professional careers, stay in touch with developments in their fields and remain professionally alive. But we also underscore the point that this might be accomplished in different ways. As things now stand, "staying in touch" usually means launching new research projects and publishing on a regular basis. Such a pattern of productivity may fit the work of *some* professors. But it is unrealistic, we believe, to expect *all* faculty members, regardless of their interests, to engage in research and to publish on a regular timetable. For most scholars, creativity simply doesn't work that way.

We propose an alternative approach. Why not assume that staying in touch with one's field means just that—reading the literature and keeping well informed about consequential trends and patterns? Why not ask professors periodically to select the two or three most important new developments or significant new articles in their fields, and then present, in writing, the reasons for their choices? Such a paper, one that could be peer reviewed, surely would help reveal the extent to which a faculty member is conversant with developments in his or her discipline, and is, in fact, remaining intellectually alive.

As a third mandate, every faculty member must be held to the highest standards of integrity. It goes without saying that plagiarism, the manipulation of laboratory data, the misuse of human or animal subjects in research, or any other form of deceptive or unethical behavior not only discredits the work of professors, but also erodes the very foundation of the academy itself. Issues of professional integrity also arise in more subtle ways regarding teaching. For example, how well do faculty prepare for classroom presentations, and how much advice and consultation do they give students outside the classroom?

Fourth, the work of the professoriate—regardless of the form it takes—must be carefully assessed. Excellence is the yardstick by which all scholarship must be measured. Effective ways surely must be found to evaluate faculty performance in the four dimensions of scholarship we discuss in this report, as difficult as the process may be. Faculty who engage in research, in teaching, in service, or in integrative work must demonstrate to the satisfaction of peers that high performance standards have been met.

Yet, today, at most four-year institutions, the requirements of tenure and promotion continue to focus heavily on research and on articles published in journals, especially those that are refereed (table 3). Good teaching is expected, but it is often inadequately assessed. And the category of "service," while given token recognition by most colleges, is consistently underrated, too.

In preparing this report, we conducted extensive conversations about standards for tenure and promotion with distinguished scholars and leaders of learned societies in five disciplines: chemistry, English, communications, economics, and business. We asked: "Where in the

United States are scholars in your field experimenting with alternative approaches to evaluation?" These academics told us they know of few truly creative examples of faculty evaluation that go beyond research and publication.

Richard Miller's survey of chief academic officers reinforced the point that the shift toward research has, in fact, been increasing at the expense of teaching. When asked how the balance between teaching, research, and service had shifted in recent years, only 5 percent reported that, at their institution, the move had been toward teaching, while 26 percent reported a shift toward research, away from teaching. This trend was especially striking at doctoral institutions, where 56 percent of the academic officers reported a move toward research and away from teaching and service (table 4).

One reason research and publication loom so large is that published articles are relatively easy to measure, at least quantitatively. There is, in most disciplines, a fairly clear hierarchy of journals and a recognized process of peer review. Books also are used for evaluation, although practice here varies from one discipline to another. For example, a department chairman at a ranking research university reported that "in psychology, all that counts is articles in high prestige journals. Even books don't count as much." Another scholar stated: "Economists have carefully studied publications and have developed a rank order for them. At research institutions, one must publish in particular journals. Quantitative studies are better than qualitative studies." Another scholar told our researcher, "Books are more important than articles at the Harvard Business School. And the book must get good reviews." What's important, regardless of the field, is that research results must be published and peer reviewed.

But there is an irony in all of this. While journal articles—and occasionally books—are widely used to measure faculty performance, a strong undercurrent of dissatisfaction exists within the prevailing system. For example, more than 60 percent of today's faculty feel that teaching effectiveness, not publication, should be the *primary* criterion

Table 3

Percent of Faculty Rating the Following "Very Important" for Granting Tenure in Their Department

	RESEARCH	DOCTORATE-GRANTING	COMPREHENSIVE	LIBERAL ARTS	TWO-YEAR
Number of publications	56%	55%	30%	8%	2%
Recommendations from outside scholars	53	29	9	16	3
Research grants received by the scholar	41	35	19	9	3
Reputations of presses or journals publishing the books or articles	40	32	18	7	2
Recommendations from other faculty within my institution	16	13	19	38	15
Student evaluations of courses taught	10	19	37	45	29
Lectures or papers delivered at professional meetings or at other colleges and universities	8	8	12	7	3
Published reviews of the scholar's books	8	7	5	3	1
Service within the scholar's discipline	6	8	13	11	7
Observations of teaching by colleagues and/or administrators	4	6	20	29	43
Service within the university community	3	6	17	27	19
Recommendations from current or former students	3	6	13	30	15
Academic advisement	2	2	6	15	6
Syllabi for courses taught	1	2	9	14	18

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1989 National Survey of Faculty.

Table 4

Has the Balance of Importance Among Teaching, Research, and Service at Your Institution Shifted in Recent Years?

	ALL RESPONDENTS	RESEARCH	DOCTORATE-GRANTING	COMPREHENSIVE	LIBERAL ARTS
Toward teaching, away from research and service	5%	13%	0%	1%	8%
Toward research, away from teaching and service	26	23	56	34	12
Toward service, away from teaching and research	1	3	0	1	0
Toward teaching and research, away from service	17	13	21	18	15
Toward research and service, away from teaching	5	7	3	8	2
Toward service and teaching, away from research	5	3	0	3	8
There has been no appreciable change	39	33	21	31	51
Some other shift among teaching, research, and service	4	3	0	5	3

SOURCE: Richard I. Miller, Hongyu Chen, Jerome B. Hart, and Clyde B. Killian, "New Approaches to Faculty Evaluation—A Survey, Initial Report" (Athens, Ohio: submitted to The Carnegie Foundation for the Advancement of Teaching by Richard I. Miller, Professor of Higher Education, Ohio University, 4 September 1990), 19.

for promotion. While professors at two-year colleges feel most strongly about this, we found that 21 percent of those at *research* universities also support the proposition (table 5). Everett Ladd, of the

Table 5
Teaching Effectiveness Should Be the Primary Criterion for Promotion of Faculty

	AGREE	NEUTRAL	DISAGREE
All Respondents	62%	7%	31%
Research	21	9	70
Doctorate-Granting	41	11	48
Comprehensive	68	8	24
Liberal Arts	76	6	18
Two-Year	92	3	4

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1989 National Survey of Faculty.

University of Connecticut, captured the climate succinctly when he wrote that today's dominant emphasis on publication "is seriously out of touch with what [the faculty] actually do and want to do."[3]

Even more disturbing, many faculty are skeptical about the seriousness with which publications are reviewed—a concern that calls into question the very integrity of the process. In our national survey, more than one-third of the faculty agreed that, on their campuses, publications are "just counted, not qualitatively measured" (table 6). We find it especially significant that 42 percent of those at research centers agree with this statement. Half the faculty at community colleges are neutral on the issue, but this reflects, we believe, the relatively low priority assigned to publications at these institutions. We recognize that these are the findings of an opinion poll; still it suggests a disturbing lack of confidence in the system if a significant percentage of faculty *believe* publications are not seriously assessed.

Many faculty were particularly critical in their written comments about this issue. In responding to our questionnaire, a professor of mathematics at a comprehensive university put it this way: "It is *assumed* that all faculty can teach, and hence that one doesn't need to spend a lot of time on it. Good teaching is assumed, not rewarded. The administrators and many faculty don't regard extra time spent

Table 6

At My Institution, Publications Used for Tenure and Promotion Are Just Counted, Not Qualitatively Measured

	AGREE	NEUTRAL	DISAGREE
All Respondents	38%	25%	37%
Research	42	9	49
Doctorate-Granting	53	10	38
Comprehensive	54	14	32
Liberal Arts	33	27	41
Two-Year	19	50	31

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1989 National Survey of Faculty.

with students as time well spent. This is the most frustrating aspect of my work." A biology professor at a top research university also expressed concern: "Only a few institutions can maintain a quality research reputation and a quality instructional program. In most, one comes at the expense of the other, and I view this as a major component in the decline of educational quality."

There is another problem about the current reward system today that deserves comment. Research dollars are in very short supply, and even when a proposal is approved through peer review, it often dies for lack of funding. Indeed, estimates are that in some fields the odds of getting an approved proposal funded are only one in ten. Thus what we have is a no-win situation. While faculty are *assigned* the classes to be taught, they are, at the same time, expected to "go hunting" for research funds—a process that can be frustrating and time consuming. Further, they are often not rewarded for teaching while being penalized if they fail to do research.

There is a related matter. All faculty are often held to the same standards, and yet research support differs dramatically from one discipline to another. Traditionally, the natural sciences are in the most favored position, but in some fields—the humanities and arts, for example—grant funds are limited or nonexistent. One professor told a

Carnegie researcher, "At our university, everyone is expected to do conventional research. I'm in the arts and not only is there no money for research, but the entire process seems oddly out-of-phase with how quality in my field is and should be measured."[4]

Given these conditions, it's not surprising that most professors support the proposition that changes in faculty evaluation procedures are important and overdue. When we asked faculty to respond to the proposition, "At my institution we need better ways, besides publications, to evaluate the scholarly performance of the faculty," 68 percent agreed. Those at research and doctorate institutions, where current evaluation procedures seem most related to campus mission, also supported strongly the proposition. Faculty who feel least strongly about the need for change are those at two-year colleges, but, again, these are institutions that rely least on publications. Note especially that professors at comprehensive colleges and universities feel most strongly about the need for change (table 7).

We conclude that the full range of faculty talent must be more creatively assessed. It is unacceptable, we believe, to go on using research and publication as the primary criterion for tenure and promotion when other educational obligations are required. Further, it's administratively unwise to ignore the fact that a significant number of faculty are dissatisfied with the current system. Even more important, it is inappropriate to use evaluation procedures that restrict faculty, distort institutional priorities, and neglect the needs of students. Clearly, the time has come not only to reconsider the meaning of scholarship but also to take the next step and consider ways by which the faculty reward system can be improved.

But what options should be considered? How can the reward system become more flexible and more vital, evaluating faculty performance beyond the scholarship of discovery?

As a first step, we urge that faculty assessment take into account a broader range of writing, especially in advancing the scholarship of integration. While articles in refereed journals and scholarly books are of great value, writing a textbook also can be a significant intellectual endeavor. Of course, textbooks, like journal articles, differ greatly in

quality, and must be evaluated as rigorously as any other form of scholarly work. Still, such writing, if well done, can reveal a professor's knowledge of the field, illuminate essential integrative themes, and powerfully contribute to excellence in teaching, too.

Table 7

At My Institution We Need Better Ways, Besides Publications, to Evaluate the Scholarly Performance of the Faculty

	AGREE	NEUTRAL	DISAGREE
All Respondents	68%	19%	13%
Research	69	12	19
Doctorate-Granting	77	10	14
Comprehensive	80	11	10
Liberal Arts	69	16	15
Two-Year	55	33	12

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1989 National Survey of Faculty.

Writing for nonspecialists—often called "popular writing"—also should be recognized as a legitimate scholarly endeavor. In the past, such work has frequently been dismissed as "mere journalism," but this misses, we believe, a larger point. To make complex ideas understandable to a large audience can be a difficult, demanding task, one that requires not only a deep and thorough knowledge of one's field, but keen literary skills, as well. Such effort, when successful, surely should be recognized and rewarded. The writings of Stephen Jay Gould in *Natural History,* the essays of Lewis Thomas, and Stephen Hawking's brilliant little book on the history of time illustrate, at the highest level, the kinds of contributions we have in mind.

Developing the right standards and finding qualified peers to review articles in nonacademic publications may be difficult, but still it is important. As a first step, it seems reasonable to assume that scholars who, themselves, have written for a wider audience will understand the importance, as well as the difficulty, of the process, making them appropriate peer reviewers. We remain convinced that these broader forms of communication merit serious consideration, and those evalu-

ating such scholarship might ask: "Does the work show a careful understanding of the discipline?" "Have key issues been well defined and creative insights well presented?" "Has the essential message been clarified?" "In what ways has public discourse been advanced?"

Let's also acknowledge that scholarship often finds expression in other ways as well. Preparing quality computer software, for example, is increasingly a function of serious scholars, and even video cassette and television offer opportunity for communicating ideas to nonspecialists in creative new ways. This potential was used by Jacob Bronowski, the British scholar, in his series "The Ascent of Man," which was broadcast on American public television in the early 1970s—a presentation of Western intellectual history in which Bronowski, educated as a mathematician, could extend brilliantly his insightful talents as a poet, inventor, and playwright.

Designing new courses and participating in curricular innovations are examples of yet another type of professional work deserving recognition. Those who help shape a core curriculum or prepare a cross-disciplinary seminar surely are engaged in the scholarship of *integration* and, again, such activity should be acknowledged and rewarded. In evaluating scholarship of this sort, key questions should be asked: Have course objectives been well defined? Has the relevant literature been cited and integrated in the course? Are key points covered and appropriate thematic relationships made?

What about *applied* scholarship? Today, almost all colleges and universities say faculty should engage in teaching, research, *and* service, but when it comes to tenure and promotion, the latter often is forgotten. Since such oversight restricts both the utility and the creativity of higher education, ways must be found to assure that professional service is taken seriously. Means are needed to document such activity, and then evaluate it. We stress again, however, that service is not a "catch all" category. While social and civic projects are important, they should not be considered a part of the scholarship of application. What *should* be included are activities that relate directly to the intellectual work of the professor and carried out through consul-

tation, technical assistance, policy analysis, program evaluation, and the like.

In documenting *applied* work—of whatever form—faculty should include not only their own written record of the project, but also the evaluations of those who received the service. Further, since applied work may take place beyond the campus, outside experts might be asked to sit on review committees. Those assessing applied scholarship should ask: Is the activity directly related to the academic expertise of the professor? Have project goals been defined, procedures well planned, and actions carefully recorded? In what ways has the work not only benefited the recipients of such activity but also added to the professor's own understanding of his or her academic field?

The question of how to evaluate *teaching* remains a mare's nest of controversy. The problem relates not only to procedures but also to the weight assigned to the endeavor. Teaching, as presently viewed, is like a currency that has value in its own country but can't be converted into other currencies. It may be highly regarded on a sizeable campus, and yet not be a particularly marketable skill. Thus, for faculty members whose primary loyalty is to their careers rather than to their institutions, teaching now counts little in increasing prospects to move on and move up. Consequently, excellence in the classroom all too often is undervalued.

For teaching to be considered equal to research, it must be vigorously assessed, using criteria that we recognized within the academy, not just in a single institution. But what might such an institution look like? Whose opinions should be used?

As openers, we suggest that evidence to assess faculty be gathered from at least three sources: self-assessment, peer assessment, and student assessment. As to self-evaluation, it seems appropriate to ask faculty, periodically, to prepare a statement about the courses taught—one that includes a discussion of class goals and procedures, course outlines, descriptions of teaching materials and assignments, and copies of examinations or other evaluation tasks. Faculty might also be asked to step back and discuss, more informally, their impressions about the gains and losses experienced in the classroom—what

worked well, what barriers were encountered, what steps might be taken to improve the course next time around.

Then there is peer evaluation. In our survey of academic leaders, we found ambivalence about peer review, a method which may be accepted in theory, but neglected in practice. Granted, a communications professor at one ranking university told a Carnegie researcher: "There is peer review of teaching on our campus, since we believe there is a strong connection between scholarship and teaching," but this was an exception. A professor at a large state university reported: "The faculty here are opposed to peer review of teaching. The union contract will not allow it." And a faculty member at a land-grant university said: "As department chairman I attempted peer review, but the faculty voted against it after two years because it was too time consuming."[5]

Problems notwithstanding, faculty should, we believe, be primarily responsible for evaluating the teaching performance of colleagues, and the process should be as systematic as that used to evaluate research. Criteria for such assessment should be defined, and data-gathering procedures carefully developed. Specifically, faculty might work together to establish criteria for good teaching, be encouraged to move freely in and out of classrooms, observing colleagues and discussing their own teaching procedures. In addition, a faculty member might be asked to submit an essay on his or her own philosophy of teaching. Such a statement could highlight the theoretical assumptions that undergird that faculty member's teaching procedures and help not only the reviewer, but the candidate as well.

Northwestern State University in Louisiana recently introduced a new faculty program called "Teaching Circles"—groups of five to seven faculty who voluntarily come together, with one member designated as leader. The goal is to focus exclusively on teaching. Those participating observe each other's teaching and together review classroom events. The assumption is that awareness about good practice will improve as faculty meet in small groups—on an ongoing basis—to discuss pedagogical procedures. In such a process, peer evaluation will be more readily embraced.[6]

Peer review might take yet another form. A distinguished professor told one of our researchers that, at his institution, a faculty member's commitment to and insight about good teaching are evaluated through journals that focus specifically on teaching. "In my own field of chemistry," he said, "the *Journal of Chemical Education* is used as a forum for those who wish to report on good teaching practice, and the journal is widely read." Articles about teaching should be peer reviewed and given weight for tenure and promotion. In addition, national associations increasingly are including teaching as an agenda topic at their conventions. Papers prepared and presented at such sessions also merit consideration. Regardless of the method used, we urge a serious, systematic approach to the evaluation of teaching by one's colleagues.

Students also have a role to play. Although negative voices were sometimes heard, most of the scholars we interviewed spoke favorably of involving students in evaluation. A professor at one of the nation's most prestigious institutions reported: "At our university teaching is increasingly important. Faculty can, in fact, choose a teaching track. We have student evaluations and interviews with students as part of the year-to-year and tenure process." Another reported: "Faculty at our university read course syllabi and also student evaluations are seriously considered." A professor at MIT told us, "Our business students are intolerant of bad teaching. Student evaluations play a role in faculty assessment and all tenured faculty share in the review."

The benefits of student evaluation were captured recently in a letter to *The Chronicle of Higher Education*. Mary Ellen Elwell, professor at Salisbury State University wrote:

> After 20 years of undergraduate teaching with careful attention to a variety of evaluation instruments completed by my students, I am convinced that I have improved by working on the inadequacies identified by students. While I am grateful that my academic future has not rested solely on these often-flawed instruments and their sometimes strange statistical manipulation, I value my students' assessment. In my experience, they

have generally been more perceptive than I anticipate and more generous than I deserve.»

Again, we urge that student evaluation be used in making decisions about tenure and promotion. But for this to work, procedures must be well designed and students must be well prepared. It's a mistake to ask students to fill out a form at the end of a class without a serious consideration of the process. Specifically, we urge that a session on faculty assessment be part of freshman orientation. All incoming students should discuss the importance of the process, and the procedures used. Students also should be asked how teacher evaluation can be improved. Such involvement would help undergraduates think carefully about good teaching—and improve their assessment, too.

Some faculty insist the true value of a class can be judged best only over time. For this reason, we suggest asking *former* students to help with evaluation, especially in tenure decisions. Bowdoin College, for example, sends a written form to graduates, asking them to evaluate former teachers. Skidmore College, along with many other institutions, has also successfully introduced procedures for contacting alumni—especially in tenure cases—to gain retrospective assessments. In the end, all evaluators of teaching should ask: Have class goals been well defined? Is the content up to date? Do instructional procedures strike a balance between faculty leadership and student initiative? Are the methods of assessment adequate? And has the teacher been informed and enriched as a result of the experience?

Throughout this chapter, we have stressed the importance of written documentation in evaluating faculty performance—of putting evidence down on paper. However, professional performance can and should be judged in other ways as well. For example, artistic endeavors such as music recitals and performances, juried exhibitions of art work, and theatrical and dance productions also must be carefully critiqued by specialists. In preparing for such evaluation, we urge that scholars in these fields provide tapes, photographs, video cassettes, and perhaps also describe in writing, their creative process—not only interpreting their own work, but comparing it to the works of others, placing it in perspective.

When it comes to pulling all the evidence together, we are impressed by the *portfolio* idea—a procedure that encourages faculty to document their work in a variety of ways. A faculty member could choose the form of scholarship around which a portfolio might be developed. The material used could include many of the varied forms we've described—ranging from publications, to field work documentation, to course descriptions, peer reviews, student evaluations, and even, perhaps, recordings and videocassettes.

Above all, faculty evaluation should be not only systemmatic, but flexible as well. While all colleges should have well-defined procedures, each faculty member also should play a central role in shaping the criteria to be used in his or her evaluation. Recently, all departments at Syracuse University were asked to review promotion and tenure guidelines and define creative new standards. The Writing Program was the first to respond. Candidates in this program are now to be evaluated in ways that cut across traditional categories of teaching, research, and service. For example, the guidelines speak of significant intellectual work by faculty that includes such activity as "creating new knowledge," "connecting knowledge to other knowledge," "making specialized knowledge publicly accessible and usable," and "communicating . . . experience through artistic works or performance."» Within these broad categories, the rich diversity of scholarship is encouraged.

Kenneth E. Eble, of the University of Utah, in capturing this spirit, urged that faculty "seek to broaden definitions of professional competence and humanize the means by which we arrive at such judgments." He went on to offer some useful prescriptions: "Put less stress on evaluating what we have done and more on stimulating what we might do. Do less counting of our own and our colleagues' publications and more thinking about what we do day-to-day which will never be published. Do less longing to arrive at the higher goals of academe and more about making wherever you are a liveable and interesting and compassionate community."» Where such conditions exist, the wide range of faculty talent will be tapped, students will be well served, and scholarship, in a richer, fuller sense, will be affirmed.

CHAPTER 4

The Creativity Contract

THE QUALITY OF SCHOLARSHIP is dependent, above all else, on the vitality of each professor. Colleges and universities that flourish help faculty build on their strengths and sustain their own creative energies, throughout a lifetime. Henry David Thoreau captured the importance of such renewal in commenting on his decision to leave the solitary, reflective life at Walden Pond. "I left the woods," he wrote, "for as good a reason as I went there . . . it seemed to me that I had several more lives to lead, and could not spare any more time for that one. It is remarkable how easily and insensibly we fall into a particular route, and make a beaten track for ourselves."[1]

It flies in the face of all experience to expect a professor to engage in the same type of performance across an entire career, without a change of pace. Faculty renewal is essential. Yet, today, academic work is defined, all too frequently, in single-dimensional terms, with research and publications used as the yardstick by which success is measured. In such a climate, those who don't publish with regularity are often considered "deadwood," as if professional commitments are narrow and unchanging. Such a suffocatingly restricted view of scholarship leads frequently to burnout or plateaus of performance as faculty are expected to do essentially the same things, year after year.

The irony is that most professors do not think of themselves simply as researchers. Even a quarter of a century ago, studies revealed that while faculty identified strongly with their own disciplines, they also wanted teaching to be more highly valued. More recently, data from the 1989 Carnegie Foundation faculty survey show that for 70 percent of today's professors, teaching represents their primary interest (table 8). And it's equally significant, we believe, that even at

Table 8

Do Your Interests Lie Primarily in Research or in Teaching?

	RESEARCH	TEACHING
All Respondents	30%	70%
Research	66	33
Doctorate-Granting	45	55
Comprehensive	23	77
Liberal Arts	17	83
Two-Year	7	93

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1989 National Survey of Faculty.

research universities, about one-third of the faculty support this proposition, while at two-year institutions it was over 93 percent. Faculty may not view research as their preferred function and yet, year after year, they are often held to this single measure of success.

To counter burnout or stagnation, scholarship in its fullest sense must be acknowledged. This means not only broadening the reward system, but also creating flexible and varied career paths for professors. We urgently need arrangements that encourage shifts and alterations throughout a lifetime. Lee Knefelkamp, of Columbia University, captured elegantly the professional pattern we have in mind when she urged that academic life be viewed through the metaphor of "seasons." Knefelkamp writes that faculty members may, in fact, change their interests, "revisit tasks, challenges, phases, stages—seasons—dozens of times during our academic careers. There is no rhythm that fits every single person . . ."[3]

Underlying such rhythms are forces deeply rooted in the life pattern of every individual. Roger Baldwin and Robert Blackburn, citing the work of psychologist Daniel Levinson, describe adulthood as having stable and transitional periods. "During the stable periods the adult pursues fairly clear goals. But periodically, the individual must reorder priorities and change behavior in order to compensate for ne-

glected dimensions of the self (e.g., unfulfilled ambitions, newly acquired interests)."[3] Erik Erikson, approaching life patterns from yet another perspective, describes the middle years of adulthood as a time when "generativity" and "stagnation" are in competition. Generativity, Erickson points out, is sparked by new priorities, a larger sense of caring, a desire to reach out, to share and belong. Stagnation, on the other hand, results from feelings of isolation, a belief that one's work has little meaning.[4]

Members of the professoriate also experience periods of stability and change. But for faculty, such ebbs and flows are profoundly influenced—and complicated—by professionally imposed hurdles. The novice instructor, for example, is expected to master new skills and gain full entry into the academic world. In today's marketplace, this may mean spending several years as a "gypsy scholar," moving from campus to campus on one-year or part-time appointments. Facing profound uncertainty, the young academic still is expected to teach and publish articles and books. Further, new faculty may find career pressures competing with family obligations—a situation compounded by the trend toward longer post-doctoral work in many fields.

Faculty who *do* secure a tenure-track position often are obliged to publish with regularity and "make a name" for themselves. But this is also a season when teaching can be especially time-consuming, when professors are expected to do departmental chores and serve on campuswide committees. The danger is stress and burnout, and in our faculty survey, 53 percent of those under 40 years of age reported that "my job is a source of considerable personal strain." It's also true, however, that pressure declines as experience increases (table 9).

Significantly, younger faculty believe that the quality of their work is, in fact, diminished by competing obligations. More than half of those we surveyed stated that, "I hardly ever get time to give a piece of work the attention it deserves"; while less than one-third of the faculty over 60 have this concern (table 10). In addition, 43 percent of faculty under 40 fear that the "pressure to publish reduces the quality of teaching at my university" (table 11).

Table 9

My Job Is the Source of Considerable Personal Strain

	AGREE	NEUTRAL	DISAGREE
All Faculty	44%	11%	45%
Age			
Under 40	53	13	34
40 to 49	44	11	45
50 to 59	41	9	50
60 to 64	41	12	47
65 and over	26	9	64

SOURCE: The Carnegie Foundation for the Advancement of Teaching, *The Condition of the Professoriate: Attitudes and Trends, 1989*, p. 82.

Table 10

I Hardly Ever Get Time to Give a Piece of Work the Attention It Deserves

	AGREE	NEUTRAL	DISAGREE
All Faculty	43%	13%	44%
Age			
Under 40	53	13	34
40 to 49	49	13	39
50 to 59	38	14	48
60 to 64	33	14	53
65 and over	29	11	60

SOURCE: The Carnegie Foundation for the Advancement of Teaching, *The Condition of the Professoriate: Attitudes and Trends, 1989*, p. 81.

Roger G. Baldwin, in commenting on pressures of the professoriate, notes that, "The press of fixed responsibilities leaves little time to stay broadly informed of developments in one's field or to plan for an uncertain future. . . . Keeping the demands of the early career manageable can prevent burnout and preserve fragile faculty morale."[3] Late career professors march to different drummers. Faculty, in this season, if they are successful, experience a peak in status and recognition, and demands for their service from outside their institution often grow. Psychologist Wilbert J. McKeachie, at the University of Michigan, comments: "For the established senior professor, service on national committees, requests to write chapters in invited symposia, or invitations to deliver addresses may take time formerly devoted to research and teaching."[4] However, for most faculty at this stage-those not in leadership positions—the principal danger is becoming stuck on a "career plateau."

At the far end of the spectrum, older professors also need new challenges if they are to avoid the worst hazards of disengagement—feeling isolated from disciplinary developments and irrelevant to institutional concerns. What is most certain, and must be more fully recognized, is that faculty in late career stages still have considerable capacity for growth. Given their great breadth of knowledge and experience, such individuals are prime candidates for integrative and applied scholarship, for example. And as experienced teachers, they can be especially helpful to younger faculty. Career paths for senior professors should be more flexible and varied.

The argument for career flexibility relates also to variations in the disciplines, since patterns of productivity appear to vary from field to field. Mathematicians and physicists, for example, are most productive in their younger years, while historians and philosophers tend to be most productive later on. Einstein propounded his special theory of relativity at age twenty-six, while Kant's seminal work, *The Critique of Pure Reason*, did not appear until he was fifty-seven, and then, for the next nine years, he followed with an outpouring of writings that revolutionized philosophical thought.

Table 11

The Pressure to Publish Reduces the Quality of Teaching at My University

	AGREE	NEUTRAL	DISAGREE
All Faculty	35%	19%	46%
Age			
Under 40	43	20	37
40 to 49	34	18	48
50 to 59	32	18	50
60 to 64	31	25	45
65 and over	39	21	40

SOURCE: The Carnegie Foundation for the Advancement of Teaching, *The Condition of the Professoriate: Attitudes and Trends, 1989*, p. 51.

Recently, the *Washington Post* presented graphs showing the varying patterns of outstanding contributions over lifetimes. Physicists, for example, make most of their contributions by age thirty-five, with astronomers peaking about ten years later. In the arts, lyric poets hit peak creativity before age thirty, while novelists mature somewhat later, reaching the height of their creative powers around age forty-five (figure 1). It is particularly heartening to note that in some fields creativity that has declined surges again in late life. Any system of faculty evaluation and reward should, we believe, recognize the differing patterns of productivity in faculty, so far as age, career, and the discipline are concerned.

Given personal and professional changes that occur across a lifetime, what's needed, we believe, are career paths that provide for flexibility and change. Alternating periods of goal-seeking and reassessment should be common for all academics. As Roger Baldwin writes, "Higher education should acknowledge the changing character of these periods and help professors travel through them successfully."[7] Specifically, we recommend that colleges and universities develop what might be called *creativity contracts*—an arrangement by

which faculty members define their professional goals for a three- to five-year period, possibly shifting from one principal scholarly focus to another. Indeed, looking down the road, we can see the day when staying with one dimension of scholarship—without a break—would be considered the exception, not the rule.

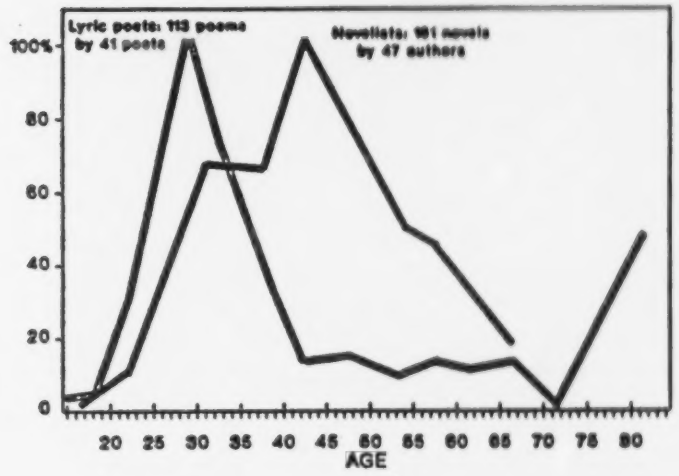
Here's how the creativity contract might work: We can imagine a faculty member devoting most of his or her early career to specialized research. Then the scholar might wish to examine integrative questions—taking time to read in other fields, write interpretive essays or a textbook, or spend time with a mentor on another campus to discuss the implications of his or her work. Still later, the creativity contract might focus on an applied project, one that would involve the professor in school consultations or as an advisor to a governmental body. And a contract surely could, from time to time, focus on the scholarship of teaching. The professor might agree to revise a course, design a new one, or prepare new teaching materials, using videos or film segments, for example. All such activities should, of course, be well documented and carefully assessed.

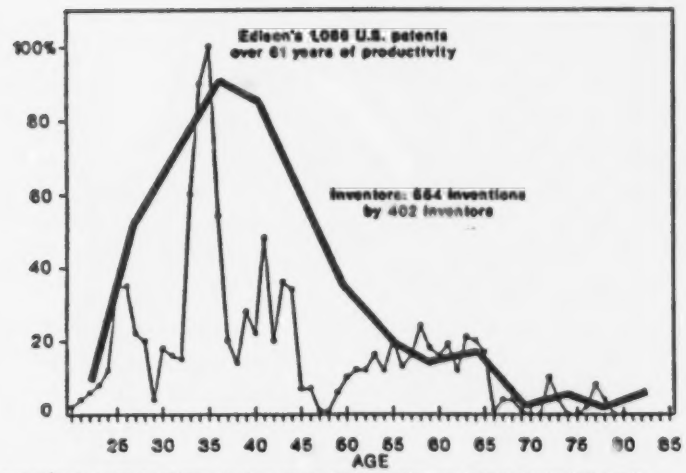
What we propose, in short, is that faculty expectations and related evaluation not only be *broadened* but that they be *individualized* and *continuous* as well. If faculty are to build on their strengths and contribute constructively to the institutions where they work, evaluation criteria must be tailored to personal talents, as well as campus needs. And it is especially important, we believe, that the criteria used reflect changing patterns of personal and professional growth across a lifetime. Once again, *diversity*, not uniformity, is the key.

We are aware that many institutions already have informal arrangements for faculty professional growth. Georgia State University's College of Business Administration, for example, "has a new policy that allows professors to choose from five career 'profiles': a traditional profile, which places equal weight on research and teaching; a research profile; a teaching profile; a service profile; and an administrative profile. All five carry minimum expectations for teaching, research, and service."[6] Such efforts make it possible for faculty to interrupt their schedules to complete a degree program, take time for research and publication, work on teaching duties, and participate

Figure 1

The Height of Creative Powers

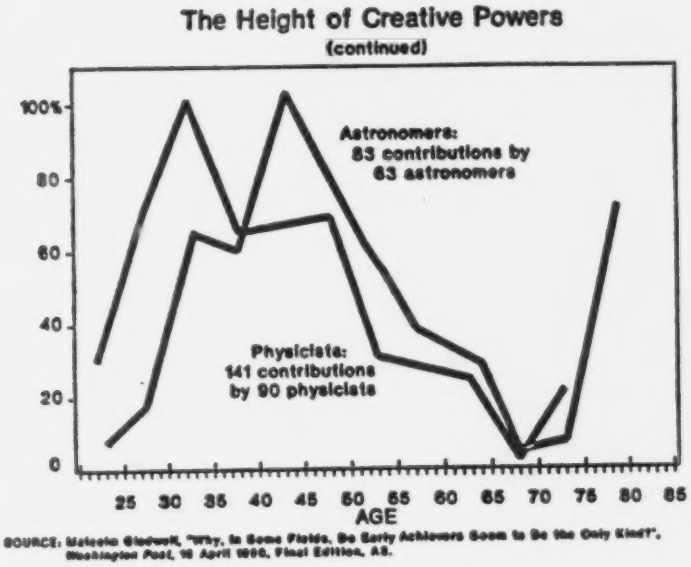




SOURCE: Malcolm Gladwell, "Why, in Some Fields, Do Early Achievers Seem to Be the Only Kind?", *Washington Post*, 16 April 1990, Final Edition, A3.

50

Figure 1 *(continued)*



SOURCE: Malcolm Gladwell, "Why, In Some Fields, Do Early Achievers Seem to Be the Only Kind?", Washington Post, 10 April 1990, Final Edition, A3.

in national professional activities. We believe these practices could be the basis for what we have called the "creativity contract."

The potential benefit of a flexible career path was revealed in a comment we received from a senior professor at a research institution. "[A] few years ago," he said "I felt much differently about my work and institution than I do now. I would have answered your questions on morale and a career change negatively then. [But] my school gave me the time, room, and encouragement to move in new directions. In my case, I am now directing new writing programs campuswide and introducing new concepts like computer-assisted instruction in writing and writing across the curriculum. I have, quite frankly, felt a sense of

renewed purpose, energy, and usefulness in my work. I hope that other institutions are as flexible and open to new ideas as mine."

The creativity contract idea may appear utopian, but it *is* attainable, we believe. The goal is not to encourage an erratic pattern of activity; rather, it is to sustain productivity across a lifetime. Such a creativity contract, if appropriately designed, will acknowledge the diversity of talent, as well as the changing seasons of academic life and have the capacity to keep faculty creative and productive. These characteristics are essential if education is to be enriched and if the life of each professor continually renewed.

CHAPTER 5

The Campuses: Diversity with Dignity

BROADENING SCHOLARSHIP has implications not only for individuals but for institutions, too. Today's higher education leaders speak with pride about the distinctive missions of their campuses. But such talk often masks a pattern of conformity. Too many campuses are inclined to seek status by imitating what they perceive to be more prestigious institutions. We are persuaded that if scholarship is to be enriched, every college and university must clarify its own goals and seek to relate its own unique purposes more directly to the reward system for professors.

In 1963, Clark Kerr, then president of the University of California, delivered his widely noted Godkin lectures in Cambridge, Massachusetts. He told the audience at Harvard University: "The university is being called upon to educate previously unimagined numbers of students; to respond to the expanding claims of national service; to merge its activities with industry as never before; to adapt to and rechannel new intellectual currents." Only when this transformation had taken place, Kerr predicted, would we have "a truly American university, an institution unique in world history, an institution not looking to other models but serving, itself, as a model for universities in other parts of the globe."[1]

This forecast has largely come to pass. A network of world-rank research centers has been built. But we have done more: doctorate-granting institutions, liberal arts campuses, and a category called comprehensive colleges and universities offer a truly remarkable range of programs. Beyond that, more than a thousand two-year and specialized institutions are scattered from coast to coast. This pattern, above all else, reflects a deep national commitment to open higher education to the broadest possible range of our citizenry. But even as the num-

ber of institutions grew, a single model of scholarship came to dominate the system, and the nation's higher learning institutions increasingly have become more *imitative* than *distinctive*.

As far back as 1956, David Riesman described the "snakelike procession" in which colleges and universities, especially the newer ones, tend to follow the path taken by older, more established institutions, reinforcing a practice that occasionally has been called the upward drift.[3] Rather than defining their *own* roles and confidently shaping their *own* distinctive missions, campuses increasingly seek to gain status by emulating research centers. Some changed their name; others simply changed the rules by which faculty are recruited or rewarded. Either way, many institutions have lost a sense of distinctiveness, and scholarship's potential has remained strikingly unfulfilled.

During the 1950s we had, in the United States, a network of colleges that took pride in their unique missions. Often referring to themselves as "experimental," these institutions were unusually creative in developing new curriculum designs, or in promoting work-study programs, or in innovative living-learning arrangements, or in assessing imaginatively the undergraduate program. Much of this excitement has diminished, and what we would like to see today are more colleges and universities that take pride in their uniqueness.

To be sure, no two colleges are alike. We have, in the United States, universities that focus largely on research. We have land-grant and urban colleges and universities that speak of public service, and our system of higher education has an impressive array of two-year and liberal arts colleges, as well, that know quite clearly what they are. Still, the tendency in recent years has been to impose a single model of scholarship on the entire higher education enterprise.

The power of this imitative pattern was vividly illustrated in a letter we recently received from a faculty member at a Midwest institution that, in just twenty years, had gone from a teachers' college to a "doctorate" institution. We were told that "now the goal is to gain a Research designation in the next decade." The professor writes: "Those hired during the doctoral period—most of the faculty—are now being required to change their priorities in order to be promoted, and the faculty being hired are radically different in orientation from

many of their colleagues. Those who have been very service- or teaching-oriented for years are finding they cannot be promoted or receive merit pay in this new situation. Many are retiring early, and the union and administration are grappling with this transition."[3]

Simply stated, what we have on many campuses today is a crisis of purpose. Far too many colleges and universities are being driven not by self-defined objectives, but by the external imperatives of prestige. Even institutions that enroll primarily undergraduates—and have few if any resources for research—seek to imitate ranking research centers. In the process, their mission becomes blurred, standards of research are compromised, and the quality of teaching and learning is disturbingly diminished. "By believing themselves to be what they are not . . . ," as Ernest Lynton and Sandra Elman of the University of Massachusetts put it, "institutions fall short of being what they could be" and, in the process, not only deprive society of substantial intellectual services, but also diminish the vitality of higher learning.[4]

The issue here is not whether an institution should be concerned about quality or status—or whether a campus mission might be changed. Rather, our concern is with the uniformity of the pattern and the divisive struggle on many campuses between "teaching" and "research." At some places the two functions can in fact fit easily together. In graduate seminars, for example, a clear connection often can be made between scholarly investigation and classroom instruction. At that level, faculty and student cultures intersect and, further, graduate faculty often have a very light teaching load to accommodate their research.

But at the undergraduate level, and most especially in general education courses, research work often competes with classroom obligations, both in time and content. Faculty assigned to teach such courses frequently must take short cuts in their research or rely heavily on teaching assistants—an arrangement that is often less than satisfactory for both student and professor. We find it revealing, for example, that, in our surveys, more than half the faculty at research and doctorate institutions agreed that at their institution "the pressure to publish reduces the quality of teaching" (appendix A-32).

In the push for external recognition, faculty teaching loads are reduced. At big universities, freshmen and sophomores often are assigned to large sections, meeting with "TAs." Undergraduates are especially frustrated when they find themselves trapped in a system where their own interests are put in second place. This adds up to the perception that many institutions are more concerned about status than about their students.

But ground rules may be changing. The heady days of rampant physical expansion in American higher education have long since faded. Faculty mobility has slowed, and rather than view their present position as a stepping stone to a more prestigious one, increased numbers of professors have dug deep roots. With the growing recognition that one's career might easily be spent at a single institution, loyalty to the local campus appears to be increasing. When The Carnegie Foundation surveyed faculty in 1984, only 29 percent said their college or university was "very important" to them. Last year, it was 40 percent (table 12).

Further, while the academic discipline is still important, faculty increasingly are expressing loyalty to the campus and we are impressed that colleges and universities—even the big, complex ones—refer to the campus as a "community"; and some even use the metaphor of "family." In 1989, when we surveyed several hundred college and university presidents, 96 percent said they "strongly believe in the importance of community." Almost all respondents also agreed that "community is appropriate for my campus" and supported the proposition that "administrators should make a greater effort to strengthen common purposes and shared experiences."

We urge, then, that every higher learning institution define its own special mission and develop a system of faculty recognition that relates to what the campus is seeking to accomplish, and the four categories of scholarship discussed in this report could serve as a framework for such discussions. But beyond this basic mandate, some campuses might, for example, decide to give priority to research, others might elect to give special emphasis to teaching, while still others to the integration or application of knowledge, and some may provide a blend of all. Each college or university should, of course, view

teaching as a core requirement. We also can imagine that even *within* institutions, different priorities may prevail from one department or division to another. And even within *departments* there could be a "mosaic of talent." We're suggesting that diversity, not uniformity, be the goal, and in this spirit, we outline below possible options for the full range of colleges and universities in the nation.

Table 12

Percent of Faculty Who Rate the Following "Very Important" to Them: 1984 and 1989

	1984	1989
Their academic discipline	76%	77%
Their department	41	53
Their college or university	29	40

SOURCE: The Carnegie Foundation for the Advancement of Teaching, 1984 and 1989 National Surveys of Faculty.

At the *research university*, original research and publication should remain the basic expectations and be considered the key criteria by which the performance of most faculty will be assessed. Where else but in our major research universities—with their intellectual and physical resources and their tradition of rigorous and untrammeled inquiry—should the bulk of research in a free society be conducted and rewarded?

But, at research centers, the integration and application of knowledge also should be valued. Interdisciplinary institutes, for example, provide a unique opportunity for scholars from different backgrounds to fit their specialized studies into larger intellectual patterns. At the same time, professional schools within the universities have the capacity to transform "in the nation's service" from a slogan to a reality.

Research universities also must aggressively support teaching. After all, a significant percentage of their students are undergraduates,

and such institutions are clearly obligated to provide them a quality education. Is it ethical to enroll students and not give them the attention they deserve? Christopher Jencks and David Riesman, writing in 1968, vividly described the price that's paid when teaching is neglected: "No doubt most professors prefer it when their courses are popular, their lectures applauded, and their former students appreciative. But since such successes are of no help in getting a salary increase, moving to a more prestigious campus, or winning their colleagues' admiration, they are unlikely to struggle as hard to create them as to do other things. . . . Many potentially competent teachers do a conspicuously bad job in the classroom because they know that bad teaching is not penalized in any formal way."[6]

To expect faculty to be good teachers, as well as good researchers, is to set a demanding standard. Still, it is at the research university, more than any other, where the two must come together. To bring teaching and research into better balance, we urge the nation's ranking universities to extend special status and salary incentives to those professors who devote most of their time to teaching and are particularly effective in the classroom. Such recognition will signify that the campus regards teaching excellence as a hallmark of professional success.

At *doctorate-granting universities* a different approach to scholarship is needed. These institutions typically see themselves as being "in transition," embracing to a very large degree the research model. As an administrator at one such campus expressed it, "Our goal is to be in the top twenty or certainly in the top fifty."[7] Surely, research is central for *some* professors, and doctorate-granting institutions can take legitimate pride in the national and international reputations of such scholars. However, doctorate-granting institutions need also to recognize professors who make exceptional contributions to other scholarly areas: integration, application, and teaching. At these institutions, perhaps more than any others, the mosaic of talent should be carefully considered.

A president at a doctorate university, in commenting on the mission of his institution, put it this way: "This campus should be a place

where both great teachers *and* great researchers function side by side. We should have the confidence to say, 'Look, you're a great researcher and we are eager to have you here doing what you do best.'" He then added, "We should also be able to say to a colleague, 'You are terrific with students, but you are not publishing. Still, we want you to help us perform an important mission on the campus.'"• This is precisely the kind of division of labor that should be clarified and strengthened at doctorate-granting institutions.

We are impressed by the service potential of doctorate universities, especially those located in large cities. For years, there has been talk of building a network of "urban grant" institutions, modeled after the land-grant tradition. We support such a movement and urge these institutions to apply their resources creatively to problems of the city—to health care, education, municipal government, and the like. What we are suggesting is that many doctoral institutions have not just a national, but more important perhaps, a *regional* mission to fulfill, too, and faculty should be rewarded for participating in these more local endeavors.

Liberal arts colleges have, historically, taken pride in the scholarship of teaching. Faculty on these campuses frequently are hired with the understanding that spending time with students, both inside and outside the classroom, is of prime importance. It seems clear that teaching undergraduates should continue to be viewed as the measure of success for liberal arts colleges. And professors at these schools should be assured, in unequivocal terms, that rewards will be based heavily on such work.

But, here again, the position cannot be absolute. Liberal arts colleges provide an especially supportive climate for the scholarship of integration. On these campuses, there is, or should be, a climate of intellectual exchange that fosters interdisciplinary studies, creative general education courses, andd capstone seminars. Kenneth Ruscio, in his study called "The Distinctive Scholarship of the Selective Liberal Arts College," has found that the work of academics in small colleges is, in fact, more "horizontal," reaching across disciplines and

bringing together ideas from a variety of sources. Ruscio concludes that "the boundaries of specializations and the taxonomies of the disciplines are considered artificial and constraining."[9]

While teaching remains central at the liberal arts college, faculty members may, from time to time, choose to focus on a research project, at least at one point or another in their careers. And funds should be made available for such work. It is unacceptable to expect faculty to conduct consequential investigation and to publish, without the time and resources to do the job. But we would particularly encourage faculty at liberal arts colleges to establish collaborative relationships with colleagues at research universities so that resources might be shared. Two groups of liberal arts colleges in the Midwest, for instance, have agreements with the University of Michigan that enable their faculty members to spend time in residence at Ann Arbor. Thus, without altering the character of the liberal arts college, these professors are able to pursue research interests.

Community colleges also have teaching as the central mission. Several years ago, the Commission on the Future of Community Colleges defined this goal precisely: "At the center of building community there is teaching. Teaching is the heartbeat of the educational enterprise and, when it is successful, energy is pumped into the community, continuously renewing and revitalizing the institution. Therefore, excellence in teaching is the means by which the vitality of the college is extended and a network of intellectual enrichment and cultural understanding is built."[10]

But here again, community college professors surely will extend their work beyond teaching and thereby enrich their work with students. Currently, about two-thirds of all community college students are enrolled in career and technical programs, so it seems reasonable to suggest that the *application* of knowledge would be an especially appropriate emphasis. Further, faculty on these campuses also might devote time to integrative studies, and while neither the teaching load nor facilities readily support research, this too may be found occasionally on a community college campus—especially research about

teaching and learning, with special emphasis on diversity in the classroom.

Patricia Cross, of the University of California at Berkeley, has written about the "*classroom researcher*—one who is involved in the evaluation of his or her own teaching and learning, even as it takes place. Such a person should be trained to be a careful observer of the teaching process, to collect feedback on what and how well students learn, and to evaluate the effectiveness of instruction."[11] Considered in this light, teaching as a form of scholarship is particularly appropriate for community colleges.

We still have much to understand about how students learn, especially those from less advantaged backgrounds, and faculty in community colleges should be authorities on this task. George B. Vaughan, former president of Piedmont Virginia Community College, put the challenge this way: that faculty members and administrators should take "the scholarship of teaching" seriously and use a research model in evaluating and improving their teaching. If the concept of "teacher-researcher" proves to be a field of research in which community college professionals engage, then this approach to research may well emerge as the most important facet of their scholarship.[12]

The *comprehensive college or university,* perhaps more than any other, can benefit most from a redefinition of scholarship. Many of these institutions—offering a broad range of baccalaureate and masters level programs—are having a difficult time sorting out priorities. Faculty frequently come to a comprehensive college or university with one set of expectations and then are asked to fulfill others. Keith Lovin, vice president of the University of Southern Colorado, describes the problem precisely: "Often we recruit new faculty members as if we were Harvard. Seldom do we consciously try to seek out faculty members who want to be at the institutions we represent. . . . This, in turn, often means that there is no sense of pride for either their institution or their role in it."[13] What we urgently need are models for the comprehensive institutions, distinctive programs and priorities that

give distinctiveness to the mission and are not purposely imitative of others.

"[M]ost of the time scholarship is still equated with research and publication on our campus," write Bruce Henderson and William Kane, members of the faculty at Western Carolina University. "We have been surprised at the degree of resistance to the broader notion of scholarship. And we are at a comprehensive, not a research, university."[14] Thomas R. Lord, professor of biology at Indiana University of Pennsylvania, has written that for some, the term "scholarship" only applies to research leading to publication. "Faculty work falling outside this definition is seen as academic dabbling." This type of stereotypical thinking excludes much of the scholarly activity not only in the community college, but in most of the baccalaureate and smaller institutions as well. Scholarship, instead, should be seen in a much broader context.[15]

Frank F. Wong, vice president for academic affairs at the University of Redlands, in a recent speech, referred to the comprehensive university as "the ugly duckling of higher education." He went on to say: "Like interdisciplinary subjects that don't fit neatly into the established classifications of academic disciplines, they are orphans in the conventional class society of academe."[16] Wong speaks vividly of the tension he personally encountered:

> When I arrived at Redlands two and half years ago faculty members would frequently comment on the 'identity problem' at the university. A significant number of faculty wanted to pursue the Pomona prototype. A smaller number wishes that we were more like Stanford where professional and graduate schools set the tone and dominate the budget. Still others wanted Redlands to be like Hampshire or Evergreen, overtly unconventional and self-consciously progressive. One did not have to look far for the source of the identity problem. There was no definitive model of the comprehensive university. And somehow, the models that existed, those that faculty intuitively turn to, were a

> poor fit for the assemblage of activities and dynamics that are found at the comprehensive university. Because that specie of institution is so poorly defined and ill understood, those of us at such universities need to create their meaning and interpret their significance."

We agree. Comprehensive colleges and universities have a unique opportunity to carve out their own distinctive missions. Rather than imitate the research university or arts and sciences model, these institutions should be viewed as campuses that blend quality and innovation. Some comprehensive colleges may choose to emphasize the scholarship of integration, encouraging interdisciplinary courses and publications, including textbooks that highlight the synthesis of knowledge. Such campuses—as *integrative* institutions—also might sponsor colloquia and all-college forums, bringing together scholars to discuss larger themes. In such a climate, faculty would be encouraged, through their scholarly work, to make connections across the disciplines, and surely they would be rewarded for such efforts.

Other comprehensive campuses might make the *application* of knowledge the centerpiece of their effort. They could, for example, give priority to programs that build bridges between teaching and practice. Such institutions would reward faculty who establish links with institutions beyond the campus, relate the intellectual life to contemporary problems, and, in the land-grant tradition, become centers of service to the communities that surround them.

At Rollins College's Crummer Graduate School of Business, faculty are encouraged to write textbooks or articles on teaching business. "We value publication by our faculty members, but the kinds of publications we value are different," says Martin Schatz, dean of the school. He concluded: "For a large research university with doctoral programs, traditional research may be appropriate. But for a school like ours or the many others where the main work is at the undergraduate or master's level, the application of knowledge should be valued more than the development of knowledge."[8]

Some comprehensive institutions also have a special opportunity to return to their "teacher training roots," doing research on peda-

gogy, making the scholarship of teaching a top priority. Many of these institutions serve large groups of first-generation students. They have a rich diversity of undergraduates on campus and frequently serve older, part-time students. Building a true community of learning in the classroom and finding ways to educate diverse students and evaluate the results is a challenge that seems especially appropriate for the comprehensive college or university.

Here, then, is our conclusion. In building a truly diverse higher learning system, let's have great research centers where undergraduate instruction *also* will be honored. Let's have campuses where the scholarship of teaching is a central mission. Let's have colleges and universities that promote integrative studies as an exciting mission through a core curriculum, through interdisciplinary seminars, and through team teaching. And let's also have colleges and universities that give top priority to the scholarship of application, institutions that relate learning to real life—in schools, in hospitals, in industry, and in business—much as the land-grant colleges worked with farmers.

What we are calling for is *diversity with dignity* in American higher education—a national network of higher learning institutions in which each college and university takes pride in its own distinctive mission and seeks to complement rather than imitate the others. While the full range of scholarship can flourish on a single campus, every college and university should find its own special niche. Why should one model dominate the system?

CHAPTER 6

A New Generation of Scholars

ALL FORMS OF SCHOLARSHIP require a broad intellectual foundation. To prepare adequately the coming generation of scholars, we must ensure the quality of both their undergraduate and graduate education. Simply stated, tomorrow's scholars must be liberally educated. They must think creatively, communicate effectively, and have the capacity and the inclination to place ideas in a larger context.

The American professoriate recently has come through a difficult time. Many of today's older faculty, following in the footsteps of their mentors, took a promising first job offer and after tenure, moved up the academic ladder, gaining recognition and prestige. For years, this system seemed to work. Then, almost overnight, new faculty faced sharply diminished opportunities. Tenure slots were restricted. Prospects for advancement narrowed. Retrenchment and lack of mobility created a highly competitive environment, spreading a sense of unease, even frustration, within the academy.

But now the pendulum may be swinging back. Career prospects are becoming brighter and the academy seems poised for a decade of renewal. Consider these statistics: In the 1984 Carnegie Foundation faculty survey, 50 percent agreed that this is a poor time for any young person to begin an academic career. In 1989, the percentage agreeing with this statement had dropped to 20 percent (table 13). We also asked in 1989: "How have job prospects for graduate students in your field changed over the past five years?" Fifty-five percent said prospects were "better"; only 13 percent felt they were getting "worse."[1] This growing sense of optimism runs across the board, covering all types of institutions (appendix A-42).

Table 13

This Is a Poor Time for Any Young Person
to Begin an Academic Career

	AGREE	NEUTRAL	DISAGREE
1984	50%	—	50%
1989	20	14	66

SOURCE: The Carnegie Foundation for the Advancement of Teaching, *The Condition of the Professoriate: Attitudes and Trends, 1989* (Princeton, N.J.: Carnegie Foundation for the Advancement of Teaching, 1989), 73, 88.

Opportunities for new scholars are looking up; still, warning signals should be heeded. The vast army of recruits who entered academic life after the Second World War will soon retire, and for the first time in years, the nation's colleges and universities are beginning to search aggressively for a new generation of faculty. In their recent study, William G. Bowen and Julie Ann Sosa predicted a shortage of qualified professors by the year 2000, with the greatest gap in the humanities and social sciences. The authors also conclude that while demand for faculty will increase for all sectors, comprehensive universities are projected to have the greatest need.[3]

Clearly, the vitality of scholarship is threatened if the pool of recruits dwindles. As David Riesman put it, the academy must protect its seed corn and aggressive steps must be taken now to recruit into the professoriate the brightest and the best.[3] Further, concerns about tomorrow's professoriate cannot be seriously raised without focusing, with special urgency, on minority faculty, since the next generation of scholars will be challenged, as never before, by diversity in the classroom. The intolerably small pool of qualified minority applicants represents a shocking weakness, if not an indictment, of American education at all levels.

While developing a system second to none, we have failed, in this country, to cultivate an appropriately diverse faculty to staff it. Major efforts must be made to recruit minority graduate students for college faculty. As a step in the right direction, the University of Alabama at

Birmingham has established a minority program of faculty development that provides summer internships for minority high school students of unusual potential. We strongly urge that every college and university join with surrounding schools to recruit black and Hispanic and Native Americans into teaching, and such programs should begin with students who are still in junior high.

In the end, the issue is not the *number* of new faculty, but the *quality* of their training. Will tomorrow's professors have an understanding of scholarship as described in this report? Will they have the capacity to place their specialized training in a larger context? If so, what kind of education will be required?

We begin with the conviction that education is a seamless web, and that the quality of scholarship is being shaped, not just in graduate schools, but in the early grades. Indeed, if anything is clear from the debate about education, it is that the various levels of formal learning cannot operate in isolation, and that the quality of scholarship surely begins in school, and especially in college—a time when the student's breadth of knowledge and intellectual habits will be either strengthened or diminished.

Jaroslav Pelikan, Sterling Professor of Philosophy and former dean of the Yale Graduate School, in *Scholarship and Its Survival*, calls for a major overhaul of collegiate education. He questions the traditional departmental major that today so dominates undergraduate education and concludes that the best preparation for graduate work is, in fact, a broad-based field of study. Such a focus is needed, Pelikan argues, because of "the increasingly interdisciplinary character of scholarly research."[4]

In this same spirit, we recommend in *College: The Undergraduate Experience in America*, that all colleges give priority to language, defining with care a core of common learning, and we also propose what we call, "the enriched major." Such a major would run vertically, from the freshman to the senior year, interweaving general education *with* the major, and then, in the senior year, students would complete a capstone seminar. This arrangement would, we believe, put the specialty in a larger context.[5]

But it is in *graduate* education where professional attitudes and values of the professoriate are most firmly shaped; it is here that changes are most urgent if the new scholarship is to become a reality. What might be the characteristics of graduate study that would most appropriately prepare tomorrow's scholars?

We stress at the outset that most students should continue to pursue a specialized field of study and do original research. But we also are convinced that all students increasingly should be encouraged to work *across* the specialties, taking courses in other disciplines to gain a broader perspective. John Henry Cardinal Newman, in his classic work, *The Idea of a University,* argued that professional study should be located in a university precisely because such a setting would, in fact, work against narrowness of vision. It is in the university, Newman said, where students can take "a survey of all knowledge," and acquire "a special illumination and largeness of mind." Even specialized study, he insisted, should provide a liberal education, and, at its best, reflect the university's wealth of intellectual offerings.[6]

The point is that even as the categories of human knowledge have become more and more discreet, the need for interdisciplinary insight has increased. Indeed, the real danger is that graduate students will become specialists without perspective, that they will have technical competence but lack larger insights. To avoid such narrowness an integrative component should be built into every program. Specifically, we urge that all doctoral candidates be asked to put their special area of study in historical perspective and that time during graduate study also be devoted to social and ethical concerns. In such a program, the scholar should find metaphors and paradigms that give larger meaning to specialized knowledge.

In this regard, more thought should be given to the purpose and content of the dissertation. As things now stand, the dissertation is often thought of as original research, usually on an increasingly isolated topic. Consequential assertations are to be footnoted and students are discouraged from introducing ideas of their own. Creative integrative thinking often is repressed. Would it be appropriate to focus on the process of research, rather than the exclusivity of the topic? Could doctoral candidates, at the end of their dissertation, be encour-

aged to editorialize more about their work and place it in larger context? And, finally, could more credit be given for independent thinking?

Another way to encourage scholarly breadth is to revitalize, or, as the case may be, resuscitate the dissertation "orals." As things now stand, graduate study becomes increasingly narrow, culminating in a precisely focused topic. If representatives from related fields—even specialists outside the university—were invited to read the dissertation and participate in the orals, the goal of integrating knowledge would be realized. This practice is fairly commonplace at some institutions and in some fields, but we urge that it become a reality for all so that future members of the professoriate will understand the significance of integration.

Graduate education also should be more attentive to the scholarship of application. In the current climate, graduate study is, all too often, a period of withdrawal—a time when many students are almost totally preoccupied with academic work and regulatory hurdles. In such a climate, doctoral candidates rarely are encouraged or given the opportunity to see connections between thought and action. To counter such isolation, would it be possible for graduate students to participate in a practicum experience and, in so doing, be challenged to see the larger consequence of their work and help reconnect the academy to society?

We do not suggest that graduate schools transform themselves into centers for social service or political action. The work of higher learning, at the core, is and must remain disciplined inquiry and critical thought. Still, future scholars should be asked to think about the usefulness of knowledge, to reflect on the social consequences of their work, and in so doing gain understanding of how their own study relates to the world beyond the campus. In this regard, we are impressed by "field-based" programs in medicine, business, law, and education that involve students in clinical experience and apprenticeships.

The Ford Foundation's Peter Stanley has questioned the tendency of scholars to frame their inquiry all too frequently along lines unrelated to social and civic life. "This society," Stanley said, ". . . suffers terribly from the separation that is opening between it and its most

thoughtful members. When scholars address that need by framing their questions somewhat more broadly and writing so as to make enormously complicated issues and evidence understandable to serious lay readers, they perform a service not only to the community of scholars, but to society at large. This is an ideal that I wish graduate education in America more typically recognized and more vigorously espoused."[9]

Finally, graduate schools should give priority to teaching. As far back as 1930, G. J. Laing, dean of the graduate school at the University of Chicago, raised the essential questions: "What are we doing in the way of equipping [graduate students] for their chosen work? Have the departments of the various graduate schools kept the teaching career sufficiently in mind in the organization of their program[s] of studies? Or have they arranged their courses with an eye to the production of research workers only, thinking of the teacher's duties merely as a means of livelihood . . . while he carries on his research? And finally comes the question: What sort of college teachers do our Doctors of Philosophy make?"[10]

The standard response is that specialized study is the best preparation for teaching. This may be true for those who teach advanced graduate or post-doctoral students. At this level, faculty and student cultures closely interact. But in teaching *undergraduates*, faculty confront circumstances in which more general knowledge and more precise pedagogical procedures are required. Helping new professors prepare for this special work is an obligation graduate schools have, all too often, overlooked. Kenneth Eble in his book *Professors as Teacher* registered an observation that is widely shared: "[The professor's] narrowness of vision, the disdain for education, the reluctance to function as a teacher are ills attributable in large part to graduate training. Upgrading the preparation of college teachers in graduate schools is therefore fundamentally important not only to improving teaching but to refashioning higher education."[11]

Some critics have urged a Doctor of Arts degree for those interested in college teaching. It's our position that this two-track approach is not desirable. The graduate program should change, not the degree.

What's needed is a requirement that teacher training be incorporated into all graduate preparation. Specifically, we urge that all graduate students participate in a seminar on teaching. Such an experience would improve classroom skills and also inform, in penetrating ways, the nature of the discipline under study. Further, by learning how to teach a phenomenon, one learns about the phenomenon itself. Ideally, the seminar on teaching would be taught collaboratively by a ranking professor in the discipline, and a colleague knowledgeable about how students learn. We also urge that the seminar be given academic credit. Anything less would suggest that teaching is just "tacked on."

Important steps are now being taken. For example, the physiology department at the State University of New York at Buffalo offers a special course on teaching biological science for its graduate students. At Indiana University, teaching assistants in the French department take a course on pedagogy that includes an overview of foreign language teaching and an examination of the theoretical bases underlying current practice. The teaching resource centers at universities such as Syracuse, the University of Washington, and the University of California, Davis, offer workshops that help academic departments prepare graduate students for teaching.

Teaching assistant programs, perhaps more than any other, are crucial in the preparation of future teachers. But the question is: "How effective are they?" Most "TA" arrangements are not viewed as significant academic undertakings. Graduate students are "assigned a section" but given little or no help. The primary aim is to give senior faculty relief and help graduate students meet financial obligations. The needs of those being taught are often not seriously considered. The situation is exacerbated when the most accomplished graduate students are given *research* assistantships—and rewarded by *not* having to teach. One TA put it this way: "Teaching is considered secondary at best, with the implication being that those who aspire to teach or who enjoy it are not good scholars or intellects. The department gives double messages about teaching. It does not want to shortchange the undergrads, but it is suspicious of those of us who care deeply about teaching."■

Yet, the situation is improving. Universities all across the country are focusing on the role of TAs. National conferences on the subject are being held, and we urge that every TA participate in a seminar on teaching. We also urge that English proficiency be a prerequisite for such an assignment.

The University of California at San Diego was one of the first institutions in the country to require new TAs to complete a training program. The heart of San Diego's fifteen-year-old effort is a two-part seminar that covers such issues as teaching goals and course design. TAs discuss the problems they're facing after just a few weeks on the job, including how to stimulate class participation and field difficult questions. In addition, more seasoned TAs become "teaching consultants" to new recruits. The veteran TAs are also videotaped, so they can evaluate and improve their own teaching.

One final point. Graduate students, in preparing to teach, also might be asked to work with mentors—veteran faculty who have distinguished themselves by the quality of their instruction. This approach is being used widely to prepare young people to teach in elementary and secondary schools. In higher education, a close and continuing relationship between a graduate teaching assistant and a gifted teacher can be an enriching experience for both. The observations, consultations, and discussions about the nature of teaching surely would help foster critical inquiry into good practice.

In 1987, in a presentation to the Council of Colleges of Arts and Sciences, Daniel Fallon, dean of the college of liberal arts at Texas A&M University, described, in a wonderfully revealing way, his own graduate school experience that captures the essence of the inspired preparation we envision. Here was a doctoral candidate in experimental psychology being advised by his mentor to think about good teaching, and above all, to reflect on the values that sustain life itself. Fallon writes:

> More than twenty-five years ago I was finishing my Ph.D. work at the University of Virginia in experimental psychology. I was extremely fortunate to have encountered as a mentor Professor Frank W. Finger, who

> led a seminar designed for doctoral students in their final year. In it, Frank prepared us for academic life by having us discuss professional codes of ethics, write sample grant proposals, and structure our early careers, and, above all, by preparing us to teach. He had us develop lectures for various kinds of undergraduate courses, which were then criticized and redone, and we prepared different sorts of examinations and discussed principles of grading. During the spring semester he told us that there was to be a public university-wide lecture that evening by a professor from Yale who was regarded as an outstanding teacher. He urged us to attend, if we had time, in order to observe an example of good teaching.
>
> That evening was one of the high points of my life. I went alone. The lecturer was J. Vincent Scully and his topic was the history of western art and architecture. The lights were dimmed so that he could illustrate his narrative with slides depicting great works of art from antiquity to modern times. I was transported. His lecture was like flowing liquid, with one valuable idea cascading rapidly upon another, building cumulative force throughout the hour. At the end he summarized the lesson of the human spirit, as revealed through its art, in an engaging seven-word message, recurrent throughout the ages. This enduring instruction also captures the essence of my concern with the value of process. So I feel free to charge you with it today. What humanity has been telling us, Scully said, is "Love, act, or as a species perish!"[73]

Surely, much of what goes on in graduate education today is worth preserving. Graduate schools must continue to be a place where students experience the satisfaction that comes from being on the cutting edge of a field, and the dissertation, or a comparable project,

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should continue to be the centerpiece—the intellectual culmination of the graduate experience. However, it is our conviction that if scholarship is to be redefined, graduate study must be broadened, encompassing not only research, but integration, application, and teaching, too. It is this vision that will assure, we believe, a new generation of scholars, one that is more intellectually vibrant and more responsive to society's shifting needs.

CHAPTER 7

Scholarship and Community

AS WE MOVE TOWARD A NEW CENTURY, profound changes stir the nation and the world. The contours of a new order—and the dimensions of new challenges—loom large on the horizon. It is a moment for boldness in higher education and many are now asking: How can the role of the scholar be defined in ways that not only affirm the past but also reflect the present and adequately anticipate the future?

We have set forth in this report a view of scholarship that is, we believe, more appropriate to the changing conditions. We strongly affirm the importance of research—what we have called the scholarship of discovery. Without the vigorous pursuit of free and open inquiry this country simply will not have the intellectual capacity it needs to resolve the huge, almost intractable social, economic, and ecological problems, both national and global. Nor will the academy itself remain vital if it fails to enlarge its own store of human knowledge. But to define the work of the professoriate narrowly—chiefly in terms of the research model—is to deny many powerful realities. It is our central premise, therefore, that other forms of scholarship—teaching, integration, and application—must be fully acknowledged and placed on a more equal footing with discovery.

There is growing evidence that professors want, and need, better ways for the full range of their aspirations and commitments to be acknowledged. Faculty are expressing serious reservations about the enterprise to which they have committed their professional lives. This deeply rooted professional concern reflects, we believe, recognition that teaching is crucial, that integrative studies are increasingly consequential, and that, in addition to research, the work of the academy must relate to the world beyond the campus.

Higher education leaders are acknowledging that diversity brings with it important new obligations. We have, on campuses today, students of many backgrounds. Colleges and universities are being called upon to respond to a large and increasingly varied group of students, many of whom have special talents, as well as special needs. In response, greater attention to students, to teaching, to the curriculum, are being demanded. There is a recognition that faculty obligations must extend beyond the classroom, and that both the academic and civic dimensions of collegiate life must be carefully molded to serve the new constituencies.

Beyond the campus, colleges and universities are being asked to account for what they do and to rethink their relevance in today's world. Throughout the years great social advances have been initiated by scholars in America's universities; still, linkages between the campus and contemporary problems must be strengthened. Derek Bok, president of Harvard, warns of the dangers of detachment when he writes: "Armed with the security of tenure and the time to study the world with care, professors would appear to have a unique opportunity to act as society's scouts to signal impending problems long before they are visible to others. Yet rarely have members of the academy succeeded in discovering the emerging issues and bringing them vividly to the attention of the public."[1]

President Bok further observes that "what Rachel Carson did for risks to the environment, Ralph Nader for consumer protection, Michael Harrington for problems of poverty, Betty Friedan for women's rights, they did as independent critics, not as members of a faculty. Even the seminal work on the plight of blacks in America was written by a Swedish social scientist, not by a member of an American university. After a major social problem has been recognized," Bok concludes, "universities will usually continue to respond weakly unless outside support is available and the subjects involved command prestige in academic circles. These limitations have hampered efforts to address many of the most critical challenges to the nation."[2]

Clearly, higher education and the rest of society have never been more interdependent than they are today, and embedded in Bok's pointed observations is a call for campuses to be more energetically

engaged in the pressing issues of our time. Our world has undergone immense transformations. It has become a more crowded, less stable place. The human community is increasingly interdependent, and higher education must focus with special urgency on questions that affect profoundly the destiny of all: How can the quality of the environment be sustained? Should the use of nuclear energy be expanded or cut back? Can an adequate supply of food and water be assured? How can our limited natural resources be allocated to meet our vast social needs? What new structures of world order can be devised to cope with the challenges of the post-cold war era?

Even the baffling questions of just when human life begins and ends must be seriously examined against the backdrop of transcendent moral and ethical implications. Now is the time, we conclude, to build bridges across the disciplines, and connect the campus to the larger world. Society itself has a great stake in how scholarship is defined.

The nation's schools, its health care delivery system, and its banking system, for instance, all cry out for the application of knowledge that faculty can provide. New discoveries, rooted in research, can today, as in the past, produce cures for dreaded diseases and improve the quality of life. Other problems that relate, for example, to the environment, to ethical and social issues, to crime and poverty also require more carefully crafted study and, indeed, solutions that rely not only on new knowledge, but on integration, too. And surely the scholarship of teaching will be necessary to produce an informed citizenry capable of the critical thinking that is so needed in America today.

The conclusion is clear. We need scholars who not only skillfully explore the frontiers of knowledge, but also integrate ideas, connect thought to action, and inspire students. The very complexity of modern life requires more, not less, information; more, not less, participation. If the nation's colleges and universities cannot help students see beyond themselves and better understand the interdependent nature of our world, each new generation's capacity to live responsibly will be dangerously diminished.

This point, properly understood, warns against making too great a distinction between careerism and the liberal arts, between self-benefit and service. The aim of education is not only to prepare students for

productive careers, but also to enable them to live lives of dignity and purpose; not only to generate new knowledge, but to channel that knowledge to humane ends; not merely to study government, but to help shape a citizenry that can promote the public good. Thus, higher education's vision must be widened if the nation is to be rescued from problems that threaten to diminish permanently the quality of life.

The challenge is to strengthen research, integration, application, and teaching. Such a broad, energetic view of scholarship will not emerge, however, without strong leadership at the top. Indeed, the president, more than any other person, can give shape and direction to a college and create a climate in which priorities of the professoriate can be appropriately considered. Does the president, for example, push the campus primarily toward national recognition or serving local needs? Does the president truly believe that undergraduates are not only to be aggressively recruited, but also to be given full support once they enroll? And is it agreed that faculty who spend time in service will be appropriately recognized and rewarded? How, in fact, is institutional status and recognition administratively defined? What the president has to say about these matters surely will be consequential in determining the priorities of the campus.

The point is this: The modern college or university president has leverage on the formulation of policy because of the respect and visibility of the office. He or she often controls discretionary funds that can work as "pump primers" for creative projects. The president has access to legislative committees, foundations, corporate offices, and other sources of support that can encourage innovation. Further, there is a growing tendency for tenure and promotion policies to be centrally controlled. Mainly, presidents have, or should have, the power of persuasion. They can speak with a powerful voice, and we urge that presidents use the office to define scholarly priorities wisely and create campus forums where such proposals can be thoughtfully debated. Appeals to a larger vision are limited only by the ingenuity and commitments of the leader.

But, when all is said and done, faculty themselves must assume primary responsibility for giving scholarship a richer, more vital meaning. Professors are, or should be, keepers of the academic gates.

They define the curriculum, set standards for graduation, and determine criteria by which faculty performance will be measured—and rewarded. Today, difficult choices about institutional mission and professional priorities must be made. Only as faculty help shape their purposes and engage actively in policy formulation will a broader view of scholarship be authentically embraced.

Much of this important work is carried on through committees. But faculty senates also must be actively involved, and, further, new all-college forums are needed, places to discuss academic priorities that cut across departmental interests. We are concerned, however, that administrative centralization may be causing faculty governance to decline at the very moment higher learning faces the challenge of renewal. To counter such a trend, we urge that topics such as "scholarship and its uses" become a matter of campuswide discussion—with faculty committees and the faculty senate serving as the focal points for such discourse.

In shaping priorities of the professoriate, professional associations also have a crucial role to play. The Modern Language Association, for example, has begun to organize institutes on teaching—forums for intellectual exchange that encourage an integrative view of scholarship. Recently, the American Mathematical Association asked faculty across the country to investigate why so many students fail college calculus courses. The inquiry caused teachers to review the curriculum and consider more carefully their own pedagogical procedures. We are especially encouraged by the leadership of the American Council of Learned Societies that has placed increased emphasis on teaching and has linked university scholars in liberal arts fields to teachers in the nation's schools. These significant efforts help give legitimacy to scholarship in all its forms.

Finally, accrediting bodies can contribute to scholarship as redefined. Today, regional accrediting associations, at least in theory, measure each college and university on the basis of its own distinctive mission. For this, they should be applauded. In reality, however, there is still a tendency for visiting teams to judge colleges and universities quite conservatively, using traditional norms that inhibit innovations and restrict the full range of scholarly endeavors. Especially disturb-

ing is the way professional accrediting associations dictate detailed regulations and, in the process, violate the integrity of the campus, pushing institutions toward conformity.

If the potential of American higher education is to be fully recognized, standards must be flexible and creative. Campuses should be encouraged to pursue their own distinctive missions, and innovation should be rewarded, not restricted. Would it be possible, for example, for visiting teams to ask graduate schools to report on how doctoral students are being prepared for teaching? Could a college be asked to demonstrate how its institutional mission relates to criteria for faculty tenure or promotion? Would it be possible for accreditation teams to ask campuses how procedures for faculty assessment have been developed—and whether they encourage the full range of scholarship?

One last point. This report has focused largely on faculty members, as *individuals*. But professors, to be fully effective, cannot work continuously in isolation. It is toward a *shared* vision of intellectual and social possibilities—a community of scholars—that the four dimensions of academic endeavor should lead. In the end, scholarship at its best should bring faculty together.

A campuswide, collaborative effort around teaching would be mutually enriching. A similar case can be made for cooperative research, as investigators talk increasingly about "networks of knowledge," even as individual creativity is recognized and affirmed. Integrative work, by its very definition, cuts across the disciplines. And in the application of knowledge, the complex social and economic and political problems of our time increasingly require a *team* approach.

The team approach, which seems so necessary for individuals, applies to institutions, too. Looking to the future, why not imagine a vital national network of colleges and universities with great diversity and one in which the full range of human talent is celebrated and recorded? In such a system, the discovery of knowledge, the integration of knowledge, the application of knowledge, and great teaching would be fully honored, powerfully reinforcing one another. If the vision of scholarship can be so enlarged on *every* campus, it seems reasonable to expect that across the entire country a true community of

scholarship will emerge—one that is not only more collaborative, but more creative, too.

American higher education has never been static. For more than 350 years, it has shaped its programs in response to the changing social context. And as we look at today's world, with its disturbingly complicated problems, higher learning, we conclude, must, once again, adapt. It would be foolhardy not to reaffirm the accomplishments of the past. Yet, even the best of our institutions must continuously evolve. And to sustain the vitality of higher education in *our* time, a new vision of scholarship is required, one dedicated not only to the renewal of the academy but, ultimately, to the renewal of society itself.

APPENDICES

APPENDIX A

National Survey of Faculty, 1989

TABLE A-1

In My Department It Is Difficult for a Person to Achieve Tenure If He or She Does Not Publish

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**42%**	**12%**	**9%**	**10%**	**27%**
Four-Year	60	17	4	11	8
Two-Year	4	2	18	9	67
Research	83	12	1	3	2
Doctorate-Granting	71	18	2	6	3
Comprehensive	43	23	6	16	12
Liberal Arts	24	16	9	26	25
Two-Year	4	2	18	9	67
Biological Sciences	52	12	5	5	27
Business	42	10	9	8	31
Education	46	15	5	12	23
Engineering	63	18	7	7	4
Fine Arts	21	15	14	18	32
Health Sciences	37	13	10	16	25
Humanities	43	12	7	12	27
Physical Sciences	46	11	9	7	27
Social Sciences	52	10	5	7	26
Other	28	11	16	11	35
Male	45	13	9	9	25
Female	35	10	8	13	34
Less Than 40 Years Old	53	13	7	8	19
40 Years or More	39	12	9	10	29

TABLE A-2

Multidisciplinary Work Is Soft and Should Not Be Considered Scholarship

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**2%**	**6%**	**17%**	**26%**	**49%**
Four-Year	2	5	12	27	54
Two-Year	2	7	27	24	39
Research	2	5	9	27	57
Doctorate-Granting	2	4	13	25	55
Comprehensive	3	5	14	27	51
Liberal Arts	2	6	16	28	49
Two-Year	2	7	27	24	39
Biological Sciences	2	7	17	22	53
Business	2	3	27	31	37
Education	2	5	18	22	53
Engineering	2	7	19	33	39
Fine Arts	4	4	22	23	47
Health Sciences	0	8	11	33	48
Humanities	2	6	13	25	53
Physical Sciences	1	7	18	32	42
Social Sciences	2	6	11	21	60
Other	3	5	20	27	45
Male	2	7	17	28	46
Female	2	2	18	24	56
Less Than 40 Years Old	2	4	14	27	54
40 Years or More	2	6	18	26	48

TABLE A-3

In My Discipline, Most Faculty Agree on the Standards of Good Scholarship

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**17%**	**40%**	**12%**	**22%**	**9%**
Four-Year	15	40	11	23	10
Two-Year	21	38	14	20	7
Research	15	40	9	26	10
Doctorate-Granting	15	38	11	24	13
Comprehensive	15	41	12	22	10
Liberal Arts	16	46	10	19	9
Two-Year	21	38	14	20	7
Biological Sciences	22	44	12	17	5
Business	11	35	15	29	11
Education	15	32	12	31	11
Engineering	16	40	21	18	5
Fine Arts	17	36	11	18	17
Health Sciences	22	37	7	24	10
Humanities	14	47	8	22	9
Physical Sciences	28	44	14	11	4
Social Sciences	13	40	10	28	10
Other	17	34	13	24	12
Male	16	40	13	22	8
Female	18	38	10	22	12
Less Than 40 Years Old	12	36	13	24	15
40 Years or More	18	40	11	22	8

TABLE A-4

Faculty in My Department Have Fundamental Differences About the Nature of the Discipline

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**17%**	**27%**	**13%**	**22%**	**22%**
Four-Year	20	28	12	21	19
Two-Year	11	25	15	23	27
Research	25	31	11	18	15
Doctorate-Granting	21	30	12	20	16
Comprehensive	17	25	13	24	21
Liberal Arts	10	21	10	22	38
Two-Year	11	25	15	23	27
Biological Sciences	19	33	13	19	16
Business	12	25	21	22	20
Education	19	26	9	23	23
Engineering	14	29	20	18	20
Fine Arts	21	23	14	22	20
Health Sciences	12	35	6	15	32
Humanities	21	30	9	22	19
Physical Sciences	10	21	15	27	27
Social Sciences	22	26	12	17	22
Other	14	25	14	24	23
Male	17	27	14	22	19
Female	17	24	10	20	29
Less Than 40 Years Old	23	26	14	19	17
40 Years or More	16	27	13	22	23

TABLE A-5

How Important Are the Number of Publications for Granting Tenure In Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**28%**	**29%**	**14%**	**22%**	**7%**
Four-Year	41	39	11	7	2
Two-Year	2	8	19	54	17
Research	56	39	4	1	1
Doctorate-Granting	55	36	6	2	1
Comprehensive	30	42	15	10	3
Liberal Arts	8	32	31	23	6
Two-Year	2	8	19	54	17
Biological Sciences	38	27	13	19	3
Business	37	18	11	26	7
Education	34	29	13	20	5
Engineering	43	40	10	5	3
Fine Arts	13	36	17	25	10
Health Sciences	25	28	13	20	13
Humanities	26	34	14	21	5
Physical Sciences	24	33	16	21	7
Social Sciences	36	30	11	22	1
Other	20	21	15	30	15
Male	29	31	13	20	6
Female	25	24	15	28	9
Less Than 40 Years Old	38	29	11	16	6
40 Years or More	26	29	14	24	7

Table A-6

How Important Are Student Evaluations of Courses Taught for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**26%**	**41%**	**19%**	**10%**	**4%**
Four-Year	25	43	21	10	2
Two-Year	29	37	15	10	9
Research	10	41	30	16	2
Doctorate-Granting	19	42	26	11	1
Comprehensive	37	43	13	4	2
Liberal Arts	45	45	6	1	3
Two-Year	29	37	15	10	9
Biological Sciences	19	44	20	15	2
Business	27	39	15	11	8
Education	36	40	13	7	4
Engineering	17	38	31	10	4
Fine Arts	29	44	12	7	7
Health Sciences	29	42	13	7	9
Humanities	24	39	24	10	3
Physical Sciences	23	46	17	10	3
Social Sciences	27	39	20	12	1
Other	28	38	20	8	6
Male	24	42	20	9	5
Female	33	37	16	10	4
Less Than 40 Years Old	26	35	22	12	5
40 Years or More	26	42	18	9	4

TABLE A-7

How Important Are Observations of Teaching by Colleagues and/or Administrators for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**23%**	**31%**	**19%**	**21%**	**6%**
Four-Year	13	30	23	29	5
Two-Year	43	34	10	4	9
Research	4	23	29	39	5
Doctorate-Granting	6	25	27	36	7
Comprehensive	20	37	17	20	5
Liberal Arts	29	40	14	11	6
Two-Year	43	34	10	4	9
Biological Sciences	18	31	21	25	5
Business	22	29	16	25	8
Education	21	31	20	22	6
Engineering	7	30	29	29	5
Fine Arts	26	38	13	15	7
Health Sciences	23	34	18	14	11
Humanities	23	35	19	19	4
Physical Sciences	28	31	17	18	5
Social Sciences	19	26	21	28	6
Other	28	31	16	16	9
Male	19	32	20	22	6
Female	32	30	15	16	7
Less Than 40 Years Old	22	29	19	21	9
40 Years or More	23	32	18	21	6

TABLE A-8

How Important Are Recommendations from Outside Scholars for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**21%**	**24%**	**21%**	**24%**	**11%**
Four-Year	29	29	19	16	7
Two-Year	3	16	24	38	19
Research	53	30	8	6	3
Doctorate-Granting	29	36	16	13	6
Comprehensive	9	25	30	26	10
Liberal Arts	16	26	25	23	11
Two-Year	3	16	24	38	19
Biological Sciences	28	23	16	27	7
Business	10	20	22	31	16
Education	17	28	20	26	9
Engineering	31	26	21	14	8
Fine Arts	19	31	20	19	11
Health Sciences	17	23	20	15	24
Humanities	21	26	23	23	6
Physical Sciences	30	22	16	23	9
Social Sciences	23	25	22	23	8
Other	14	22	23	26	15
Male	22	24	21	23	10
Female	17	24	21	25	13
Less Than 40 Years Old	24	26	18	20	12
40 Years or More	20	24	21	24	10

TABLE A-9

How Important Are Research Grants Received by the Scholar for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**20%**	**30%**	**19%**	**23%**	**8%**
Four-Year	28	38	19	11	4
Two-Year	3	14	18	47	18
Research	40	36	16	6	2
Doctorate-Granting	35	40	16	7	2
Comprehensive	19	43	20	13	5
Liberal Arts	9	29	31	23	7
Two-Year	3	14	18	47	18
Biological Sciences	37	32	8	20	4
Business	9	27	21	31	12
Education	21	40	12	21	6
Engineering	49	28	17	4	2
Fine Arts	14	31	20	21	14
Health Sciences	32	24	17	11	16
Humanities	10	34	25	26	6
Physical Sciences	28	30	15	19	8
Social Sciences	17	34	23	23	3
Other	18	23	18	28	14
Male	21	31	19	22	7
Female	19	29	17	25	10
Less Than 40 Years Old	26	30	17	19	9
40 Years or More	19	30	19	24	8

TABLE A-10

How Important Are the Reputations of the Presses or Journals Publishing the Books or Articles for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**19%**	**27%**	**19%**	**26%**	**9%**
Four-Year	28	38	19	12	3
Two-Year	2	5	18	55	19
Research	40	43	12	3	1
Doctorate-Granting	32	41	17	8	2
Comprehensive	18	36	23	18	5
Liberal Arts	7	26	29	28	9
Two-Year	2	5	18	55	19
Biological Sciences	22	32	17	25	4
Business	25	21	15	30	10
Education	22	28	20	24	6
Engineering	28	35	27	6	4
Fine Arts	13	24	20	32	10
Health Sciences	16	29	15	24	16
Humanities	19	30	20	25	5
Physical Sciences	18	31	17	25	8
Social Sciences	20	34	17	26	3
Other	14	18	19	31	18
Male	20	29	19	24	8
Female	16	24	18	31	11
Less Than 40 Years Old	23	32	16	21	8
40 Years or More	18	27	19	27	9

TABLE A-11

How Important Are Recommendations from Other Faculty Within the Institution for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**17%**	**38%**	**24%**	**14%**	**7%**
Four-Year	18	40	24	13	4
Two-Year	15	35	22	16	11
Research	15	40	27	14	4
Doctorate-Granting	13	40	26	16	5
Comprehensive	19	39	24	13	5
Liberal Arts	38	41	13	4	4
Two-Year	15	35	22	16	11
Biological Sciences	20	43	16	17	5
Business	13	42	20	17	8
Education	18	41	21	13	7
Engineering	16	45	28	7	5
Fine Arts	18	40	20	14	8
Health Sciences	19	46	15	7	13
Humanities	15	41	27	13	4
Physical Sciences	18	40	22	14	7
Social Sciences	14	32	32	17	5
Other	21	32	24	15	9
Male	15	39	26	14	6
Female	22	37	17	15	9
Less Than 40 Years Old	21	42	16	11	10
40 Years or More	16	37	25	15	6

TABLE A-12

How Important Is Service Within the University Community for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**14%**	**37%**	**28%**	**15%**	**6%**
Four-Year	11	37	33	16	3
Two-Year	19	39	19	14	10
Research	3	23	46	25	4
Doctorate-Granting	6	37	37	18	2
Comprehensive	17	47	23	10	3
Liberal Arts	27	51	14	4	4
Two-Year	19	39	19	14	10
Biological Sciences	15	32	35	14	4
Business	14	35	28	17	8
Education	15	41	25	15	4
Engineering	5	29	46	18	3
Fine Arts	21	42	21	9	7
Health Sciences	16	42	20	10	11
Humanities	14	40	27	15	3
Physical Sciences	11	36	29	19	6
Social Sciences	11	38	31	17	3
Other	14	36	26	15	8
Male	10	38	31	15	5
Female	22	35	21	15	6
Less Than 40 Years Old	12	35	29	17	8
40 Years or More	14	38	27	15	5

TABLE A-13

How Important Are Recommendations from Current or Former Students for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**11%**	**31%**	**25%**	**26%**	**7%**
Four-Year	9	30	27	28	5
Two-Year	15	33	21	21	11
Research	3	21	33	39	5
Doctorate-Granting	6	25	32	32	5
Comprehensive	12	38	23	21	5
Liberal Arts	30	42	13	9	6
Two-Year	15	33	21	21	11
Biological Sciences	9	32	27	28	4
Business	6	23	30	29	13
Education	13	34	21	26	5
Engineering	5	24	35	30	6
Fine Arts	13	38	23	19	7
Health Sciences	16	31	20	21	11
Humanities	12	31	26	26	5
Physical Sciences	9	35	26	23	6
Social Sciences	11	28	24	33	4
Other	13	31	23	23	10
Male	9	31	27	26	7
Female	17	30	20	25	7
Less Than 40 Years Old	11	27	26	28	8
40 Years or More	11	32	25	26	7

TABLE A-14

How Important Is Service Within the Scholar's Discipline for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**9%**	**42%**	**28%**	**15%**	**7%**
Four-Year	10	48	30	9	4
Two-Year	7	29	23	26	15
Research	6	44	35	11	3
Doctorate-Granting	8	51	29	9	3
Comprehensive	13	51	26	7	4
Liberal Arts	11	43	29	11	6
Two-Year	7	29	23	26	15
Biological Sciences	7	48	27	14	3
Business	9	38	29	15	10
Education	16	47	20	12	6
Engineering	7	39	38	12	5
Fine Arts	19	42	18	15	6
Health Sciences	8	50	12	13	17
Humanities	7	42	32	14	4
Physical Sciences	7	41	31	14	8
Social Sciences	5	43	31	16	5
Other	8	36	29	17	11
Male	7	43	29	14	6
Female	13	38	24	16	9
Less Than 40 Years Old	10	34	35	12	10
40 Years or More	8	43	27	15	7

TABLE A-15

How Important Are Syllabi for Courses Taught for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**9%**	**22%**	**26%**	**34%**	**8%**
Four-Year	5	19	29	41	6
Two-Year	18	28	20	22	12
Research	1	11	29	54	5
Doctorate-Granting	2	13	30	48	6
Comprehensive	9	25	29	30	7
Liberal Arts	14	38	25	17	6
Two-Year	18	28	20	22	12
Biological Sciences	7	21	30	38	5
Business	6	19	27	36	12
Education	12	20	24	36	7
Engineering	2	17	34	40	6
Fine Arts	11	21	29	28	11
Health Sciences	16	20	21	28	16
Humanities	8	24	29	33	5
Physical Sciences	8	19	27	38	8
Social Sciences	10	23	22	41	4
Other	11	26	22	28	12
Male	7	21	27	36	8
Female	14	24	23	30	9
Less Than 40 Years Old	7	20	26	38	10
40 Years or More	10	23	26	34	8

TABLE A-16

How Important Are Lectures or Papers Delivered at Professional Meetings or at Other Colleges and Universities for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**7%**	**41%**	**27%**	**18%**	**7%**
Four-Year	9	51	28	10	3
Two-Year	3	20	24	37	16
Research	8	45	33	12	2
Doctorate-Granting	8	53	29	8	2
Comprehensive	12	56	22	8	3
Liberal Arts	7	46	30	10	6
Two-Year	3	20	24	37	16
Biological Sciences	7	44	26	19	4
Business	9	29	30	24	8
Education	9	53	15	19	4
Engineering	8	41	39	9	3
Fine Arts	8	42	21	20	9
Health Sciences	14	41	20	14	11
Humanities	6	46	27	18	4
Physical Sciences	6	42	28	15	8
Social Sciences	6	38	32	20	4
Other	7	34	26	20	13
Male	7	41	28	18	7
Female	9	40	24	20	7
Less Than 40 Years Old	7	41	27	17	7
40 Years or More	7	40	26	19	7

TABLE A-17

How Important Are Published Reviews of the Scholar's Books for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**5%**	**16%**	**29%**	**36%**	**14%**
Four-Year	6	22	34	26	11
Two-Year	1	4	18	56	21
Research	8	26	35	22	9
Doctorate-Granting	7	24	36	23	9
Comprehensive	5	20	34	29	13
Liberal Arts	3	16	32	37	12
Two-Year	1	4	18	56	21
Biological Sciences	3	9	27	44	16
Business	4	7	28	42	19
Education	5	21	28	36	10
Engineering	7	15	42	19	17
Fine Arts	8	21	21	30	19
Health Sciences	3	13	31	31	22
Humanities	7	22	29	33	8
Physical Sciences	2	13	32	37	17
Social Sciences	4	21	30	40	6
Other	3	13	26	38	20
Male	5	17	30	35	13
Female	4	14	27	39	16
Less Than 40 Years Old	5	13	30	33	19
40 Years or More	4	17	29	37	13

TABLE A-18

How Important Is Academic Advisement for Granting Tenure in Your Department?

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	VERY UNIMPORTANT	NO OPINION
All Respondents	**5%**	**20%**	**30%**	**36%**	**9%**
Four-Year	5	17	31	40	7
Two-Year	6	27	27	27	13
Research	1	8	31	52	8
Doctorate-Granting	2	11	31	49	7
Comprehensive	6	24	33	30	7
Liberal Arts	15	34	27	17	7
Two-Year	6	27	27	27	13
Biological Sciences	3	22	29	38	8
Business	3	22	23	39	13
Education	7	23	32	30	8
Engineering	4	11	38	38	9
Fine Arts	9	24	27	33	7
Health Sciences	10	21	28	25	16
Humanities	3	17	34	38	8
Physical Sciences	2	22	34	32	10
Social Sciences	6	17	30	41	7
Other	6	22	25	35	11
Male	4	19	32	37	9
Female	8	22	26	33	10
Less Than 40 Years Old	4	17	31	36	12
40 Years or More	5	21	30	36	9

TABLE A-19

Approximately How Many Articles Have You Ever Published in Academic or Professional Journals?

	NONE	ONE TO FIVE	SIX TO TEN	ELEVEN OR MORE
All Respondents	**26%**	**33%**	**13%**	**28%**
Four-Year	13	30	17	40
Two-Year	52	38	6	4
Research	4	16	16	63
Doctorate-Granting	9	27	21	42
Comprehensive	19	41	17	24
Liberal Arts	32	42	12	15
Two-Year	52	38	6	4
Biological Sciences	8	27	15	51
Business	33	35	8	24
Education	22	34	16	29
Engineering	9	25	13	53
Fine Arts	45	37	8	10
Health Sciences	29	42	13	16
Humanities	23	35	18	24
Physical Sciences	20	30	9	41
Social Sciences	19	33	16	32
Other	42	31	11	16
Male	22	30	13	35
Female	36	39	13	13
Less Than 40 Years Old	27	39	16	19
40 Years or More	26	31	13	30

TABLE A-20

Approximately How Many Books or Monographs Have You Ever Published or Edited, Alone or in Collaboration?

	NONE	ONE TO FIVE	SIX TO TEN	ELEVEN OR MORE
All Respondents	**56%**	**38%**	**4%**	**2%**
Four-Year	49	43	5	3
Two-Year	69	28	2	1
Research	38	51	7	4
Doctorate-Granting	47	46	5	2
Comprehensive	57	38	3	2
Liberal Arts	67	30	2	1
Two-Year	69	28	2	1
Biological Sciences	60	40	1	0
Business	56	38	4	2
Education	55	37	5	3
Engineering	62	32	4	1
Fine Arts	69	28	1	2
Health Sciences	73	26	1	0
Humanities	42	49	6	3
Physical Sciences	64	31	4	1
Social Sciences	49	43	5	3
Other	58	37	3	2
Male	52	41	5	3
Female	65	33	2	1
Less Than 40 Years Old	71	28	1	1
40 Years or More	53	40	4	2

TABLE A-21

Are You Currently Engaged In Any Scholarly Work That You Expect to Lead to a Publication, an Exhibit, or a Musical Recital?

	YES	NO
All Respondents	**66%**	**34%**
Four-Year	84	16
Two-Year	32	68
Research	95	5
Doctorate-Granting	89	11
Comprehensive	75	25
Liberal Arts	68	32
Two-Year	32	68
Biological Sciences	78	22
Business	54	46
Education	60	40
Engineering	80	20
Fine Arts	81	19
Health Sciences	64	36
Humanities	71	29
Physical Sciences	68	32
Social Sciences	71	29
Other	50	50
Male	69	31
Female	60	40
Less Than 40 Years Old	79	21
40 Years or More	63	37

Table A-22

During the Past 12 Months, Did You Attend Any National Professional Meetings?

	YES	NO
All Respondents	**68%**	**32%**
Four-Year	76	24
Two-Year	48	52
Research	86	14
Doctorate-Granting	78	22
Comprehensive	69	31
Liberal Arts	65	35
Two-Year	48	52
Biological Sciences	75	25
Business	61	39
Education	80	20
Engineering	79	21
Fine Arts	60	40
Health Sciences	69	31
Humanities	66	34
Physical Sciences	65	35
Social Sciences	65	35
Other	67	33
Male	68	32
Female	66	34
Less Than 40 Years Old	73	27
40 Years or More	67	33

Table A-23

Teaching Effectiveness Should Be the Primary Criterion for Promotion of Faculty

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**32%**	**30%**	**7%**	**16%**	**13%**
Four-Year	20	27	9	25	19
Two-Year	56	36	3	3	1
Research	6	15	9	36	34
Doctorate-Granting	14	27	11	30	18
Comprehensive	31	37	8	17	7
Liberal Arts	38	38	6	12	6
Two-Year	56	36	3	3	1
Biological Sciences	21	30	7	20	22
Business	37	30	5	16	12
Education	41	29	8	14	9
Engineering	28	17	9	23	22
Fine Arts	37	36	9	12	5
Health Sciences	36	35	6	14	9
Humanities	26	36	6	20	13
Physical Sciences	23	28	7	21	20
Social Sciences	25	25	9	24	17
Other	46	31	5	12	6
Male	29	28	7	19	15
Female	39	35	5	14	7
Less Than 40 Years Old	28	25	8	24	15
40 Years or More	33	31	7	17	12

Table A-24

At My Institution Publications Used for Tenure and Promotion Are Just Counted, Not Qualitatively Measured

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**14%**	**24%**	**25%**	**18%**	**19%**
Four-Year	17	30	13	25	15
Two-Year	8	11	50	4	27
Research	15	27	9	30	19
Doctorate-Granting	19	34	10	26	12
Comprehensive	20	34	14	22	10
Liberal Arts	12	21	27	20	21
Two-Year	8	11	50	4	27
Biological Sciences	20	27	22	15	15
Business	18	27	22	16	17
Education	14	31	20	20	15
Engineering	16	34	14	23	14
Fine Arts	12	22	31	17	18
Health Sciences	12	24	23	19	22
Humanities	16	21	21	20	22
Physical Sciences	10	22	30	21	17
Social Sciences	14	24	19	22	21
Other	12	20	37	12	20
Male	14	24	25	20	18
Female	16	22	25	15	22
Less Than 40 Years Old	15	26	27	19	13
40 Years or More	14	23	24	18	20

Table A-25

At My Institution We Need Better Ways, Besides Publications, to Evaluate the Scholarly Performance of the Faculty

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**39%**	**29%**	**19%**	**9%**	**5%**
Four Year	41	33	12	10	4
Two Year	35	20	33	5	7
Research	35	34	12	14	4
Doctorate-Granting	44	33	10	10	4
Comprehensive	48	32	11	7	3
Liberal Arts	37	32	16	10	5
Two Year	35	20	33	5	7
Biological Sciences	32	30	21	12	5
Business	44	24	21	7	4
Education	47	33	10	7	2
Engineering	40	41	12	7	1
Fine Arts	51	26	16	4	3
Health Sciences	52	25	15	5	2
Humanities	35	29	18	12	6
Physical Sciences	28	33	23	11	5
Social Sciences	35	27	19	12	6
Other	43	23	24	5	5
Male	38	30	19	10	4
Female	43	25	20	6	5
Less Than 40 Years Old	39	28	18	11	4
40 Years or More	39	29	19	8	5

Table A-26

Do Your Interests Lie Primarily in Research or in Teaching?

	RESEARCH	LEANING TO RESEARCH	TEACHING	LEANING TO TEACHING
All Respondents	**6%**	**24%**	**26%**	**44%**
Four-Year	9	33	32	26
Two-Year	1	6	15	78
Research	18	48	24	9
Doctorate-Granting	8	37	35	20
Comprehensive	3	20	38	39
Liberal Arts	2	15	34	49
Two-Year	1	6	15	78
Biological Sciences	15	30	22	33
Business	7	17	25	51
Education	2	15	30	53
Engineering	7	43	23	27
Fine Arts	3	23	39	36
Health Sciences	2	23	26	48
Humanities	6	25	32	37
Physical Sciences	7	29	20	44
Social Sciences	10	29	24	37
Other	3	14	23	59
Male	7	26	26	41
Female	4	18	28	50
Less Than 40 Years Old	11	33	25	31
40 Years or More	5	22	27	47

Table A-27

During the Past 12 Months, Did You (or Your Project) Receive Research Support from Institutional or Departmental Funds?

	YES	NO
All Respondents	**42%**	**58%**
Four-Year	51	49
Two-Year	23	77
Research	59	41
Doctorate-Granting	55	45
Comprehensive	43	57
Liberal Arts	45	55
Two-Year	23	77
Biological Sciences	59	41
Business	37	63
Education	33	67
Engineering	48	52
Fine Arts	37	63
Health Sciences	50	50
Humanities	43	57
Physical Sciences	41	59
Social Sciences	47	53
Other	36	64
Male	42	58
Female	41	59
Less Than 40 Years Old	56	44
40 Years or More	39	61

Table A-28

During the Past 12 Months, Did You (or Your Project) Receive Research Support from Federal Agencies?

	YES	NO
All Respondents	**18%**	**82%**
Four-Year	24	76
Two-Year	5	95
Research	43	57
Doctorate-Granting	19	81
Comprehensive	10	90
Liberal Arts	11	89
Two-Year	5	95
Biological Sciences	41	59
Business	7	93
Education	11	89
Engineering	47	53
Fine Arts	3	97
Health Sciences	18	82
Humanities	10	90
Physical Sciences	35	65
Social Sciences	16	84
Other	11	89
Male	19	81
Female	14	86
Less Than 40 Years Old	24	76
40 Years or More	16	84

Table A-29

During the Past Two or Three Years, Financial Support for Work in My Discipline Has Become Harder to Obtain

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**30%**	**24%**	**31%**	**12%**	**3%**
Four-Year	32	26	27	12	3
Two-Year	26	21	40	11	2
Research	38	25	21	13	3
Doctorate-Granting	33	27	25	12	3
Comprehensive	27	26	31	12	4
Liberal Arts	28	25	35	10	3
Two-Year	26	21	40	11	2
Biological Sciences	41	22	25	10	2
Business	16	19	42	17	6
Education	39	25	24	10	2
Engineering	29	23	34	12	2
Fine Arts	45	19	24	9	3
Health Sciences	32	32	16	17	3
Humanities	26	23	37	11	3
Physical Sciences	27	28	34	9	3
Social Sciences	32	23	32	10	2
Other	24	25	32	15	3
Male	29	24	32	12	3
Female	33	23	29	12	3
Less Than 40 Years Old	32	23	32	11	2
40 Years or More	29	24	32	12	3

Table A-30

My Job Is the Source of Considerable Personal Strain

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**12%**	**32%**	**11%**	**27%**	**18%**
Four-Year	14	32	11	27	15
Two-Year	8	30	10	29	23
Research	15	32	12	24	16
Doctorate-Granting	12	34	12	26	15
Comprehensive	14	31	11	29	15
Liberal Arts	12	35	11	26	16
Two-Year	8	30	10	29	23
Biological Sciences	13	34	9	20	25
Business	10	23	13	31	22
Education	12	31	10	28	20
Engineering	16	33	18	20	12
Fine Arts	19	36	9	24	11
Health Sciences	12	43	11	17	18
Humanities	12	32	10	30	16
Physical Sciences	6	29	10	32	23
Social Sciences	11	28	11	32	18
Other	13	34	11	25	16
Male	11	30	12	29	19
Female	16	36	8	24	17
Less Than 40 Years Old	16	37	13	23	11
40 Years or More	11	30	10	28	20

Table A-31

I Hardly Ever Get Time to Give a Piece of Work the Attention It Deserves

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**12%**	**32%**	**13%**	**31%**	**12%**
Four-Year	13	34	13	28	11
Two-Year	9	27	13	37	14
Research	13	33	12	30	13
Doctorate-Granting	14	32	15	29	11
Comprehensive	14	37	13	26	11
Liberal Arts	13	34	11	31	11
Two-Year	9	27	13	37	14
Biological Sciences	14	32	11	30	12
Business	11	27	15	30	18
Education	7	36	12	32	13
Engineering	22	29	15	24	9
Fine Arts	17	32	13	23	14
Health Sciences	13	25	9	34	18
Humanities	11	34	10	34	11
Physical Sciences	8	31	15	34	12
Social Sciences	9	31	17	31	13
Other	13	33	12	32	10
Male	10	32	14	31	13
Female	15	32	9	32	12
Less Than 40 Years Old	16	37	13	27	7
40 Years or More	11	31	13	32	14

Table A-32

The Pressure to Publish Reduces the Quality of Teaching at My University

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**16%**	**19%**	**19%**	**19%**	**27%**
Four-Year	20	26	12	24	19
Two-Year	8	6	33	9	44
Research	24	29	10	23	15
Doctorate-Granting	23	31	11	22	14
Comprehensive	18	23	13	25	21
Liberal Arts	8	14	16	28	34
Two-Year	8	6	33	9	44
Biological Sciences	20	20	13	15	32
Business	16	19	18	16	31
Education	18	25	15	20	21
Engineering	24	29	13	19	15
Fine Arts	13	20	28	17	22
Health Sciences	20	16	18	27	20
Humanities	14	17	14	23	32
Physical Sciences	11	20	23	21	26
Social Sciences	17	19	14	22	29
Other	15	16	28	12	28
Male	15	20	19	20	26
Female	17	17	19	17	31
Less Than 40 Years Old	19	24	19	18	20
40 Years or More	15	18	19	19	29

Table A-33

Exciting Developments Are Now Taking Place in My Discipline

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**47%**	**30%**	**12%**	**8%**	**4%**
Four-Year	46	32	12	7	3
Two-Year	48	27	11	9	4
Research	47	30	12	7	3
Doctorate-Granting	46	32	13	6	3
Comprehensive	45	32	11	8	4
Liberal Arts	43	33	14	7	3
Two-Year	48	27	11	9	4
Biological Sciences	80	14	3	3	0
Business	35	37	20	4	4
Education	41	37	11	7	4
Engineering	55	28	11	4	2
Fine Arts	40	27	15	13	5
Health Sciences	50	34	8	5	3
Humanities	32	37	14	14	4
Physical Sciences	59	28	9	3	1
Social Sciences	38	29	16	13	5
Other	54	27	8	6	6
Male	46	30	12	8	3
Female	48	30	10	7	5
Less Than 40 Years Old	52	30	10	6	3
40 Years or More	46	30	12	8	4

Table A-34

I Tend to Subordinate All Aspects of My Life to My Work

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**11%**	**30%**	**9%**	**30%**	**20%**
Four-Year	12	33	10	29	17
Two-Year	9	24	8	34	25
Research	13	33	9	27	17
Doctorate-Granting	10	32	9	30	19
Comprehensive	12	32	10	29	17
Liberal Arts	13	33	10	29	15
Two-Year	9	24	8	34	25
Biological Sciences	12	32	10	25	21
Business	8	33	8	25	26
Education	9	30	11	31	20
Engineering	20	33	11	21	15
Fine Arts	18	35	9	24	14
Health Sciences	12	18	10	36	23
Humanities	11	31	9	31	18
Physical Sciences	6	29	11	32	21
Social Sciences	8	27	9	33	24
Other	13	29	6	34	19
Male	10	29	10	30	21
Female	13	31	7	31	18
Less Than 40 Years Old	14	33	8	30	15
40 Years or More	10	29	9	30	21

Table A-35

I Am More Enthusiastic About My Work Now Than I Was When I Began My Academic Career

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**16%**	**28%**	**22%**	**21%**	**12%**
Four-Year	16	27	24	21	12
Two-Year	18	29	18	22	13
Research	15	26	26	21	12
Doctorate-Granting	15	24	25	23	14
Comprehensive	16	29	22	20	13
Liberal Arts	18	29	23	21	9
Two-Year	18	29	18	22	13
Biological Sciences	17	21	26	25	12
Business	18	26	24	21	11
Education	15	27	21	22	14
Engineering	15	25	28	18	14
Fine Arts	23	23	22	19	13
Health Sciences	18	28	18	23	13
Humanities	17	28	20	21	15
Physical Sciences	14	27	27	22	10
Social Sciences	15	29	22	20	14
Other	16	34	18	22	10
Male	15	27	24	22	12
Female	19	29	18	21	13
Less Than 40 Years Old	15	31	24	21	8
40 Years or More	17	27	22	21	13

Table A-36

If I Had It to Do Over Again, I Would Not Become a College Teacher

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**6%**	**8%**	**8%**	**24%**	**53%**
Four-Year	7	9	9	25	51
Two-Year	6	7	7	21	58
Research	6	7	11	25	51
Doctorate-Granting	8	8	10	26	48
Comprehensive	7	10	7	25	51
Liberal Arts	6	8	8	22	55
Two-Year	6	7	7	21	58
Biological Sciences	7	8	8	19	57
Business	5	8	10	23	54
Education	8	7	9	23	54
Engineering	8	5	11	21	54
Fine Arts	7	10	9	23	51
Health Sciences	5	9	10	30	46
Humanities	7	9	6	20	57
Physical Sciences	6	9	9	25	51
Social Sciences	7	8	8	23	54
Other	5	8	8	28	51
Male	6	9	9	24	52
Female	7	7	7	24	56
Less Than 40 Years Old	6	8	9	30	47
40 Years or More	6	8	8	22	55

Table A-37

I Feel Trapped in a Profession with Limited Opportunity for Advancement

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**6%**	**13%**	**10%**	**21%**	**50%**
Four-Year	6	12	11	21	50
Two-Year	7	15	9	20	50
Research	5	9	10	19	56
Doctorate-Granting	7	13	10	20	50
Comprehensive	7	15	11	23	44
Liberal Arts	6	12	10	23	50
Two-Year	7	15	9	20	50
Biological Sciences	5	14	14	19	48
Business	4	10	8	23	55
Education	4	14	10	24	49
Engineering	6	10	13	16	56
Fine Arts	12	16	11	18	43
Health Sciences	10	14	10	20	45
Humanities	6	13	8	19	54
Physical Sciences	5	10	9	23	53
Social Sciences	6	13	8	24	49
Other	7	15	11	18	48
Male	6	13	11	21	50
Female	8	13	8	20	50
Less Than 40 Years Old	5	18	12	22	43
40 Years or More	7	12	10	20	52

Table A-38

Please Indicate the Degree to Which Your Academic Discipline Is Important to You

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	NOT AT ALL IMPORTANT
All Respondents	**77%**	**21%**	**2%**	**0%**
Four-Year	76	22	2	0
Two-Year	81	17	2	0
Research	77	21	2	0
Doctorate-Granting	75	23	2	0
Comprehensive	75	23	2	0
Liberal Arts	77	21	2	0
Two-Year	81	17	2	0
Biological Sciences	82	17	0	0
Business	70	26	3	1
Education	80	19	1	0
Engineering	75	23	2	0
Fine Arts	91	9	0	0
Health Sciences	85	14	1	0
Humanities	78	20	2	0
Physical Sciences	76	23	1	0
Social Sciences	70	25	5	0
Other	76	22	2	0
Male	75	23	2	0
Female	83	16	1	0
Less Than 40 Years Old	78	19	3	0
40 Years or More	77	21	2	0

Table A-39

Please Indicate the Degree to Which Your Department Is Important to You

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	NOT AT ALL IMPORTANT
All Respondents	**53%**	**37%**	**8%**	**1%**
Four-Year	51	38	9	2
Two-Year	58	34	6	1
Research	48	39	11	2
Doctorate-Granting	48	41	8	3
Comprehensive	52	37	9	1
Liberal Arts	59	35	5	1
Two-Year	58	34	6	1
Biological Sciences	55	34	8	3
Business	48	44	8	1
Education	54	37	8	1
Engineering	52	42	6	0
Fine Arts	58	37	4	1
Health Sciences	63	33	4	0
Humanities	50	36	12	2
Physical Sciences	51	38	9	1
Social Sciences	48	37	12	3
Other	60	34	5	0
Male	52	38	9	1
Female	57	35	7	1
Less Than 40 Years Old	46	43	10	1
40 Years or More	55	36	8	1

Table A-40

Please Indicate the Degree to Which Your College or University Is Important to You

	VERY IMPORTANT	FAIRLY IMPORTANT	FAIRLY UNIMPORTANT	NOT AT ALL IMPORTANT
All Respondents	**40%**	**45%**	**12%**	**2%**
Four-Year	35	48	14	3
Two-Year	51	40	8	1
Research	30	50	17	4
Doctorate-Granting	34	47	16	3
Comprehensive	36	48	12	3
Liberal Arts	53	38	8	1
Two-Year	51	40	8	1
Biological Sciences	43	40	13	4
Business	39	47	12	2
Education	50	42	6	2
Engineering	41	43	16	1
Fine Arts	40	47	10	3
Health Sciences	36	53	11	0
Humanities	38	45	13	4
Physical Sciences	37	49	13	1
Social Sciences	35	45	16	3
Other	46	43	10	2
Male	39	45	13	2
Female	43	45	10	2
Less Than 40 Years Old	28	53	16	3
40 Years or More	43	44	11	2

Table A-41

This Is a Poor Time for Any Young Person to Begin an Academic Career

	STRONGLY AGREE	AGREE WITH RESERVATIONS	NEUTRAL	DISAGREE WITH RESERVATIONS	STRONGLY DISAGREE
All Respondents	**6%**	**14%**	**14%**	**35%**	**31%**
Four-Year	7	14	15	37	27
Two-Year	4	14	11	32	39
Research	7	15	16	38	24
Doctorate-Granting	7	15	14	37	26
Comprehensive	7	13	16	36	28
Liberal Arts	4	12	12	40	31
Two-Year	4	14	11	32	39
Biological Sciences	7	12	12	34	35
Business	5	13	16	29	37
Education	4	14	13	35	34
Engineering	11	17	15	32	25
Fine Arts	9	13	19	30	29
Health Sciences	2	10	13	26	49
Humanities	5	18	13	39	25
Physical Sciences	6	12	15	36	32
Social Sciences	5	14	15	37	30
Other	7	12	11	40	30
Male	6	14	15	36	29
Female	6	13	12	34	35
Less Than 40 Years Old	8	12	16	41	23
40 Years or More	5	14	13	34	33

Table A-42

How Have Job Prospects for Graduate Students In Your Field Changed over the Past Five Years?

	MUCH BETTER	SOMEWHAT BETTER	ABOUT THE SAME	SOMEWHAT WORSE	MUCH WORSE
All Respondents	**25%**	**30%**	**32%**	**10%**	**3%**
Four-Year	25	33	31	9	2
Two-Year	24	25	34	12	5
Research	23	34	30	10	3
Doctorate-Granting	25	34	30	9	2
Comprehensive	28	31	31	9	1
Liberal Arts	22	35	32	8	3
Two-Year	24	25	34	12	5
Biological Sciences	18	35	32	10	5
Business	26	33	36	4	0
Education	28	21	33	16	3
Engineering	28	30	38	4	0
Fine Arts	9	14	51	20	6
Health Sciences	68	15	15	3	0
Humanities	19	40	28	10	4
Physical Sciences	30	34	27	8	1
Social Sciences	18	36	32	11	3
Other	29	26	31	10	3
Male	23	31	33	10	2
Female	31	28	28	9	4
Less Than 40 Years Old	25	31	29	12	4
40 Years or More	25	30	32	10	3

APPENDIX B

Technical Notes

THE CARNEGIE FOUNDATION DATA presented in this report represent the responses of faculty from across the nation at all types of institutions. The 1989 National Survey of Faculty was conducted for The Carnegie Foundation for the Advancement of Teaching by the Wirthlin Group of McLean, Virginia. Questionnaires were mailed to nearly 10,000 faculty members; usable returns numbered 5,450, a 54.5 percent completion rate.

A two-stage, stratified, random sample design was used. In the first stage, colleges and universities—both four-year and two-year—were selected; in the second, faculty were designated. For each of the nine Carnegie Classification types, approximately 34 institutions were selected for a total of 306 colleges and universities. Within each Classification category a school was selected with a likelihood proportionate to the size of its faculty compared to the others within that type.

For selecting faculty within the designated institutions, an n-th name selection process was used. The 9,996 faculty in the sample were equally divided among Carnegie Classification types.

For conducting analyses, faculty responses are weighted by Carnegie Classification categories. The weight used for each type is proportionate to its relative size within the total for all types. Size is defined as the total number of faculty.

The 1989 and 1984 data presented in this report represent full-time campus faculty members. The 1969 figures refer to all respondents. Some figures in the tables may not add up to 100 percent due to rounding of decimals. In several of the tables "strongly agree" and "agree with reservations" have been combined to represent "agree";

"strongly disagree" and "disagree with reservations" have been combined to represent "disagree."

A more detailed description of the results from the 1989 National Survey of Faculty can be found in *The Condition of the Professoriate: Attitudes and Trends, 1989*, published by Princeton University Press in 1989. For additional information on data presented in this report, contact The Carnegie Foundation for the Advancement of Teaching, 5 Ivy Lane, Princeton, New Jersey, 08540.

APPENDIX C

Carnegie Classifications

THE 1987 CARNEGIE CLASSIFICATION includes all colleges and universities in the United States listed in the 1985-86 *Higher Education General Information Survey of Institutional Characteristics*. It groups institutions into categories on the basis of the level of degree offered—ranging from prebaccalaureate to the doctorate—and the comprehensiveness of their missions. The categories are as follows:

Research Universities I: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate degree, and give high priority to research. They receive annually at least $33.5 million in federal support and award at least 50 Ph.D. degrees each year.

Research Universities II: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate degree, and give high priority to research. They receive annually at least $12.5 million in federal support and award at least 50 Ph.D. degrees each year.

Doctorate-granting Universities I: In addition to offering a full range of baccalaureate programs, the mission of these institutions includes a commitment to graduate education through the doctorate degree. They award at least 40 Ph.D. degrees annually in five or more academic disciplines.

Doctorate-granting Universities II: In addition to offering a full range of baccalaureate programs, the mission of these institutions in-

cludes a commitment to graduate education through the doctorate degree. They award annually 20 or more Ph.D. degrees in at least one discipline or 10 or more Ph.D. degrees in three or more disciplines.

Comprehensive Universities and Colleges I: These institutions offer baccalaureate programs and, with few exceptions, graduate education through the master's degree. More than half of their baccalaureate degrees are awarded in two or more occupational or professional disciplines such as engineering or business administration. All of the institutions in this group enroll at least 2,500 students.

Comprehensive Universities and Colleges II: These institutions award more than half of their baccalaureate degrees in two or more occupational or professional disciplines, such as engineering or business administration, and many also offer graduate education through the master's degree. All of the institutions in this group enroll between 1,500 and 2,500 students.

Liberal Arts Colleges I: These highly selective institutions are primarily undergraduate colleges that award more than half of their baccalaureate degrees in art and science fields.

Liberal Arts Colleges II: These institutions are primarily undergraduate colleges that are less selective and award more than half of their degrees in liberal arts fields. This category also includes a group of colleges that award less than half of their degrees in liberal arts fields but, with fewer than 1,500 students, are too small to be considered comprehensive.

Two-Year Community, Junior, and Technical Colleges: These institutions offer certificate or degree programs through the Associate of Arts level and, with few exceptions, offer no baccalaureate degrees.

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